नेहरू बाल पुस्तकालय

चाय की कहानी

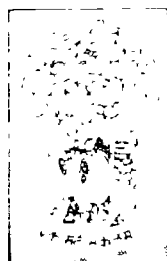
लेखक

अरूप कुमार दत्त

चित्रकार

मृणाल मित्र

अनुवादक

एम.एल. गुप्ता

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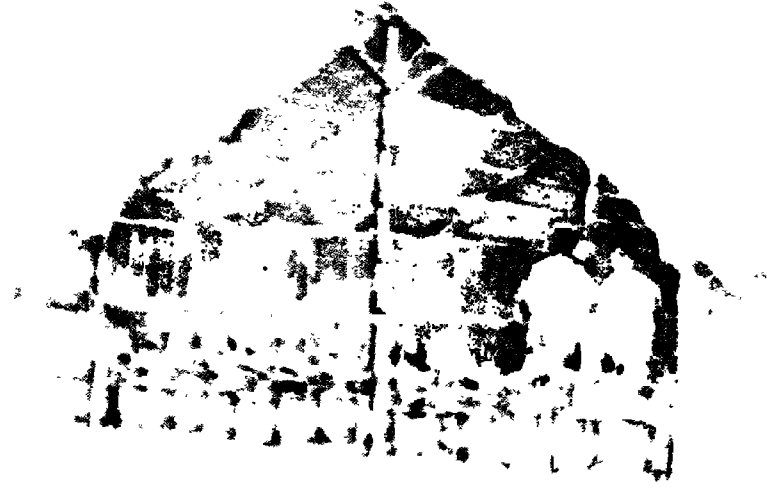
पहला संस्करण 1986 (शक 1908)
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A Story About Tea (*Hindi*)

रु. 5.50

निदेशक, नेशनल बुक ट्रस्ट, इंडिया, ए-5 ग्रीन पार्क, नयी दिल्ली-110016 द्वारा प्रकाशित।

अध्याय 1

छुक ! छुक ! करती हुई छोटी लाइन की वह गाड़ी एक छोटे स्टेशन पर रुकी। ड्राइवर के द्वारा झटके से ब्रेक लगाने से राजवीर की नींद खुल गई। 13 वर्षीय सिख किशोर राजवीर अपने दोस्त प्रांजल के साथ असम की यात्रा कर रहा था। प्रांजल खिड़की के पास बैठा एक जासूसी कहानी पढ़ रहा है। वह असम का रहने वाला है। उसके पिता असम में एक चाय बागान में मैनेजर हैं। राजवीर और प्रांजल दिल्ली में साथ साथ पढ़ते हैं और गर्मियों की छुट्टियों में प्रांजल के आमंत्रण पर राजवीर भी असम भ्रमण कर रहा है। जब राजवीर को प्रांजल ने असम घूमने का निमंत्रण दिया तो उसने उसे तुरंत स्वीकार कर लिया।

दिल्ली से असम की इस लंबी यात्रा में एक दिन-रात लग जाते हैं। इस यात्रा के दौरान उन्हें अनेक सुंदर दृश्य दिखाई दिए। अब वे थोड़ी देर बाद घर पहुंचने वाले थे।

"ओ सोने वाले ! जाग जरा !" प्रांजल ने लगभग गाते हुए राजवीर को उठा दिया। "हम लोग अगले स्टेशन मरियानी उतरने वाले हैं। अच्छा, चाय पीओगे, सुस्ती भाग जाएगी। मालूम है, चाय में काफीन होती है।"

"बस में एक मिनट में तैयार होता हूं" बिस्तर से लगभग उछलते हुए राजवीर ने कहा। उसने जल्दी बिस्तर लपेटा, कपड़े बदले, हाथ मुँह धोया और सामने खिड़की पर प्रांजल के सामने आ बैठा।

"चाइय गरम-गरम चाइय।" ऊंची आवाज में आवाज लगाता एक लड़का खिड़की के सामने से गुजरा।

"चाय साब।"

"दो कप चाय देना" प्रांजल ने कहा।

वे चाय की चुस्की लेने लगे। चाय गर्म थी और अनेक यात्री डिब्बे में बैठे बैठे चाय पी रहे थे।

"मालूम है विश्व में प्रतिदिन 8,00,000,000 कप चाय पी जाती है।" राजवीर ने कहा।

"हूं।" प्रांजल ने चाय का घूंट पीते हुए आश्चर्य व्यक्त किया। "चाय सचमुच में इतनी लोकप्रिय है।"

रेल फिर से झटका देकर रेंगने लगी थी और अब चाल पकड़ रही थी। प्रांजल फिर कहानी पढ़ने में खो गया। राजवीर भी जासूसी कहानियों का कीड़ा था किन्तु इस समय उसका मन बाहर की मनोहारी दृश्यावली देखने के लिए आतुर था।

हर तरफ हरियाली ही हरियाली। फिर शुरु हो गए हरे भरे धान के खेत-फिर आए चाय के बागान।

सचमुच वह बहुत भव्य दृश्य था। जहां तक दृष्टि डाली सभी जगह चाय-पत्तियों का मानो समुद्र उमड़ पड़ा हो। उनके प्रहरी बने वृक्षों से आच्छादित हैं पर्वत मालाएं। ऊंचे छाया वाले

वृक्षों के आगे चाय के छोटे पौधे बौने लगते थे। झाड़ियों की कतारों के बीच ये वृक्ष पतले नजर आते थे। उनसे जरा हट कर एक कच्चा टूटा फूटा मकान था जिसकी चिमनी से धुंआ निकल रहा था।

"वो देखो। चाय बागान।" राजवीर उत्तेजना से चिल्ला उठा।

प्रांजल ने एक बार उस ओर देखा और पढ़ने में खो गया। उसका जन्म इन्हीं बागानों के बीच हुआ था और इन दृश्यों से उसका पुराना परिचय था। इस कारण उसने राजवीर की उत्तेजना का कोई जवाब नहीं दिया।

"ओह। अब तो तुम चाय के देश में आ गए हो।" उसने कहा, "असम विश्व में चाय बागानों का सबसे बड़ा केन्द्र है, यहां तुम्हे इतने चाय बागान देखने को मिलेंगे कि उन्हें तुम जिंदगी भर नहीं भूल पाओगे।"

"मैं भी चाय के बारे में बहुत पढ़ता रहता हूं।" राजवीर ने बताया "किन्तु कोई भी नहीं जानता कि चाय की खोज किसने की। वैसे इस बारे में कई कथाएं सुनी हैं।"

"कैसी कथाएं।"

''एक कथा है कि चीन का सम्राट सदैव पानी उबाल कर पीता था। एक बार उबलते पानी में कुछ पत्तियां गिर गई। इससे उसे पानी का स्वाद अच्छा लगा। ऐसा कहा जाता है वे चाय की पत्तियां थीं।''

''अच्छा, दूसरी कथा सुनाओ''. . .प्रांजल ने कौतूहल से भर कर पूछा।

''यह एक भारतीय कथा है।'' राजवीर कहने लगा ''बोधि धर्म नामक एक प्राचीन बौद्ध संत को अपनी तपस्या के समय बार बार नींद आ जाती थी। तंग आकर उसने अपनी पलकें काट कर फेंक दीं। जहां जहां पर वे पलकें गिरीं वहां पौधे उग गए और उनकी पत्तियों को गर्म पानी में उबाल कर उसने उसका रस पिया तो नींद कोसों दूर भाग गई। वह चाय थी।''

''चाय सबसे पहले चीन में पी गई'', राजवीर ने बात आगे बढ़ाते हुए बताया ''ईसा से लगभग 2700 वर्ष पहले से चाय पी जा रही है। वास्तव में चाय और चीनी शब्द चीनी भाषा से लिए गए हैं। यूरोप वालों को तो चाय की जानकारी सोलहवीं शताब्दी में हुई। उस समय वे चाय को दवा के रूप में पीते थे न कि पेय के रूप में।''

रेलगाड़ी मरियानी जंक्शन के प्लेट फार्म को छूने लगी थी। लड़कों ने अपना सामान समेटना शुरु कर दिया और उसे दरवाजे के पास ले आए।

प्लेटफार्म पर बहुत भीड़ थी। प्रांजल के माता-पिता, बहन अलका और उनका पालतू अलसेशियन कुत्ता टीपू उसका इंतजार कर रहे थे। प्रांजल ने राजवीर को अपने माता-पिता और बहन से मिलाया। थोड़ी देर बाद उनकी कार ढेकियाबारी चाय बागान की तरफ दौड़ रही थी जहां प्रांजल के पिता, मि. बरुआ मैनेजर थे।

एक घंटे बाद उनकी कार मुख्य सड़क छोड़ कर और पुलिया पार कर ढेकियाबारी चाय बागान में प्रवेश कर गई।

कंकरीली सड़क के दोनों और सैकड़ों एकड़ जमीन पर चाय के पौधे एक ही ऊंचाई के छंटे हुए खड़े थे। चाय पत्तो तोड़ने वाली औरतें अपनी पीठ पर बांस की टोकरी और सामने की तरफ सिन्थेटिक के कपड़े पहने हुई नई कोमल पत्तियों को चुन चुंन कर तोड़ रही थीं।

सामने से चाय पत्तियों से भरी ट्राली लेकर एक ट्रेक्टर चला आ रहा था। प्रांजल के पिता ने उसे साइड देने के लिए कार धीमी करके सड़क के किनारे लगा दी।

"यह दूसरी बार छंटाई या चुनने का समय है, है न मि. बरुआ।". . . .राजवीर ने पूछा, "मेरे ख्याल से सबसे अच्छी चाय की पैदावार मई से जुलाई के बीच ही की जाती है।"

"अच्छा। लगता है यहां आने के पहले तुमने चाय के बारे में काफी जानकारी प्राप्त कर ली है।" प्रांजल के पिता ने आश्चर्य मिश्रित स्वर में कहा।

"जी हां, मि. बरुआ।" राजवीर ने स्वीकार करते हुए कहा। "किंतु मैं अभी यहां बहुत कुछ जानना चाहता हूँ।"

"ये तुमने मि. बरुआ-मि. बरुआ क्या लगा रखा है, मुझे अंकल कहो। मैं तुम्हें दोपहर में चाय बागान ले चलूंगा और दिखाऊंगा कि चाय कैसे पैदा होती है।"

कार मैनेजर के बंगले के गेट से अंदर घुसी। बंगले की दो मंज़िली इमारत लगभग पचास साल पुरानी थी। उसे किसी अंग्रेज चाय बागान मालिक ने बनवाया था। बांसों की एक बाड़ के साथ साथ झाड़ी लगाई गई थी जिसे बड़े करीने से छांटा गया था। उससे कंपाउंड के चारों तरफ एक बड़ा घर बन गया था। सामने की तरफ जो लान था, ऐसा लगता था मानो एक हरा कालीन बिछा दिया गया हो और बाग में लाल, नीले, पीले फूलों की तो बहार छाई हुई थी।

सामने बरामदे में उनकी ही उम्र का एक मोटा लड़का सीढ़ियों पर बैठा हुआ था। वह कमीज और निकर पहने हुए था। उसने जैसे ही प्रांजल को देखा उसके चेहरे पर खुशी की

चमक दिखाई दी। उसके दांत स्पष्ट चमक रहे थे।

"कैसे हो मंगला" प्रांजल ने जोर से आवाज दी। "आओ देखो मेरा दोस्त राजवीर आया है।"

मंगला दौड़ता हुआ आया, उसने राजवीर को बड़े गौर से देखा और उससे हाथ मिलाया।

"यह बिरची का लड़का है, हमारे कारखाने के चौकीदार का नाम बिरची है। मंगला और मैंने बहुत मजे किए हैं। और मछली के शिकार के बारे में ऐसी कौन सी बात है जो इसे मालूम नहीं है।"

"अच्छा अब चलूंगा" मंगला ने कहा-"मैं आजकल दवा छिड़कने वाले दल के साथ काम पर हूं, तुमसे मिलने चला आया था। यदि सरदार को मालूम हो गया तो मुझे कच्चा चबा जाएगा।"

मंगला ने हंसते हुए अभिवादन किया और वहां से भाग खड़ा हुआ।

अध्याय 2

दोपहर में मि. बरुआ राजवीर को चाय बागान दिखाने ले गए। प्रांजल, अलका और टीपू भी उनके साथ थे।

ढेकियाबारी 800 एकड़ में फैला हुआ एक विशाल चाय बागान था। इसलिए वे लोग मि. बरुआ की जीप में चल पड़े।

"शुरुआत क्लोन नर्सरी से करें तो बेहतर रहेगा। वहां चाय की कलमें हैं," मि. बरुआ ने सुझाव दिया।

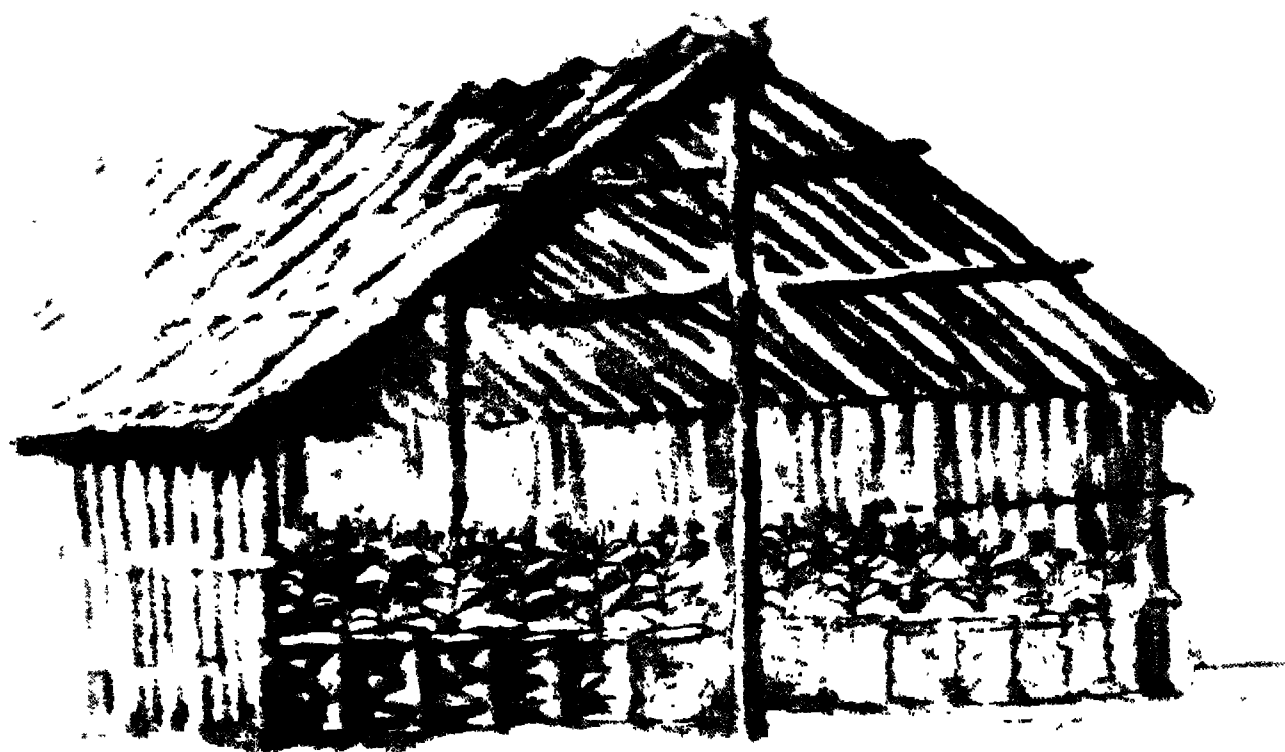
मि. बरुआ ने बताया कि चाय के पौधों की बहुत देखभाल करनी पड़ती है। खाद, जैसे नाइट्रोजन, पोटाश और फास्फेट समय समय पर जमीन में डाले जाते हैं जिससे कि चाय के पौधों की बाढ़ स्वस्थ रहे और पौधे अच्छे हों।

"इनमें नाइट्रोजन सबसे अधिक महत्वपूर्ण है। चाय के पौधों में, अन्य पौधों के समान फल नहीं होते बल्कि उनकी पत्तियां तोड़ी जाती हैं। पत्तियां पौधों की पोषक होती हैं अतः पोधों की उपज के लिए यह आवश्यक है कि लगातार नाइट्रोजन दी जाए।"

"ये पौधे कभी कभी बीमार भी पड़ जाते हैं" मि. बरुआ ने बताया "शायद तुम्हें मालूम हो कि इन्हें बीमारियां भी होती हैं जैसे दीमक लगना, चित्ती पड़ जाना, और काले धब्बे पड़ना। उस समय हमें उनकी डाक्टरी करनी पड़ती है, बीमारी का पता लगाना पड़ता है और उचित दवा देनी होती है।"

क्लोन नर्सरी एक विस्तृत क्षेत्र में फैली हुई थी, उसके चारों ओर से बांस की दीवार थी और ऊपर का नीचा छप्पर भी घास फूँस से ढका हुआ था। एक भाग पर मिट्टी की क्यारियां

बनी थीं और दूसरे भाग में पोलीथीन की थैलियों में चाय की कलमें रखी हुई थीं।

क्लीन कटिंग का मतलब था एक कलम जिसके ऊपरी हिस्से पर एक एक पत्ती ही थी और उसका तना एक इंच लंबा था। यह कलम एक झाड़ी से काटी गई थी जो विशेष रूप से क्लोनिंग के लिए उगाई गई थी। इन कलमों की मिट्टी की क्यारियों में या उपजाऊ मिट्टी से

भरी पोलोथीन की थैलियों में लगाया गया था। दस सप्ताह के अंदर इसमें जड़ों निकल आती हैं और एक वर्ष बाद इन कलमों को वहां से ले जाकर उद्यान स्थल पर लगाया जाता है।

''बीज नर्सरी भी है'' मि. बरुआ ने बताया ''किन्तु बागान वाले आजकल कलम लगाना अधिक पसंद करते हैं। कलम लगाते समय उसी नस्ल की शुद्धता को बनाए रखते हैं। इससे

कोई वर्णशंकर नस्ल तैयार नहीं होती। प्रत्येक चाय की झाड़ी की कलम लगा कर उसकी मूल झाड़ी की विशेषता को बनाए रखा जाता है।''

''फिर भी बीजों का उपयोग क्यों किया जाता है'' राजवीर ने पूछा।

''बीजों की आवश्यकता नियंत्रित पौधों की एक दूसरे की कलम लगा कर बेहतर क्वालिटी के वर्णशंकर पौधे उठाने के लिए होती है। इसके अतिरिक्त बीज सस्ते होते हैं और कलमों की अपेक्षा इनमें देखभाल की कम आवश्यकता होती है।''

''अंकल, छोटे पौधे से भरे पूरे चाय के पौधे बनने में कितना समय लग जाता है।''

''पत्तियों को पहले वर्ष से ही तोड़ा जा सकता है। किन्तु झाड़ी को विकसित होने में लगभग पांच वर्ष लग जाते हैं। चाय के पौधे की जिंदगी भी इतनी ही होती है जितनी हमारी, लगभग साठ वर्ष।''

वे फिर से जीप में चढ़ गए। मि. बरुआ उन्हें बागान के संकरे रास्ते से ले चले। एक क्षेत्र

में रासायनिक पदार्थ का छिड़काव हो रहा था। मंगला वहीं काम कर रहा था उसने उन्हें देखा तो दूर से ही अभिवादन किया।

"चलो यहां उतर लें" जीप रोक कर मि. बरुआ ने कहा।

चाय की झाड़ियों तक पहुंचने के लिए उन्हें एक गहरे गड्ढे से गुजरना पड़ा। सुपारी के वृक्ष के संकरे तने पर से गुजर कर उन्हें वह गड्ढा पार करना पड़ा। अन्य लोग तो आसानी से पार हो गए किंतु राजवीर को इसमें बड़ी कठिनाई हुई। वह कुछ कदम हिचकिचाते हुए चला और बीच में डगमगाने लगा और फिर वह सीधे न चल कर आड़े चलने लगा। जैसे लोग रस्सी पर चलते हैं किन्तु जैसे ही वह गिरने लगा उसने अपने शरीर को संभाला और सीधा होते हुए उस पार कूद गया।

उसके इस प्रयास पर सभी ने तालियां बजा कर स्वागत किया। यहां तक कि टीपू ने भी जोर जोर से भौंक कर अपनी खुशी प्रकट की।

"ये गड्ढे !" राजवीर ने उत्तेजित हो कर कहा "ऐसा लगता है ऐसे बहुत गड्ढे होंगे। बागान में ऐसे गड्ढे क्यों बनाए गए हैं?"

"ये बागान की जल वहन प्रणाली के हिस्से हैं," मि. बरुआ ने स्पष्ट किया "चाय की उपज गर्म और आर्द्रता वाली जलवायु में अच्छी होती है उसके लिए अच्छी वर्षा का होना जरूरी है। किन्तु यदि वर्षा के जल को जड़ों में इकट्ठा होने दिया जाएगा तो जड़ें सड़ जाएंगी और पौधा मुरझा जाएगा। ये गड्ढे पानी इकट्ठा होने से रोकते हैं।"

वे छिड़काव करने वाले दल के पास पहुंच गए। प्रत्येक सदस्य के पास पीठ पर लदा स्प्रेयर था। वे स्प्रेयर के लीवर को ऊपर नीचे खींचते और उससे रसायन की फुहार जमीन पर डालते जाते थे।

"ये घासपात नाशक दवा छिड़क रहे हैं" मि. बरुआ ने कहा। "यदि यह कीटाणुनाशक दवा होती तो उसे ये झाड़ियों पर छिड़काते। घासपात, मइकानिया के समान, फूस वाली घास है और वह चाय के पौधे के चारों तरफ फैल जाती है तथा उसकी उपज को बढ़ने से रोकती है या उसकी उपज को तेजी से नहीं बढ़ने देती"।

"आपने कीटाणुनाशक दवा के बारे में बताया। क्या कीटाणु भी चाय के पौधों को नुकसान करते हैं!" राजवीर ने पूछा।

"हां क्यों नहीं। लूपर्स, ग्रीन फ्राईज, थ्रिपस और बिच्छू बूटी (बिच्छू नाम का पौधा) से बहुत नुकसान हो सकता है।"

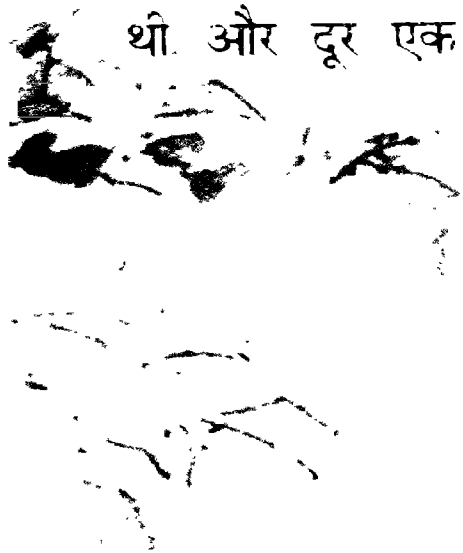
थोड़ी देर में मंगला भी वहां आ गया। उसके चेहरे पर वही चिरपरिचित मुस्कान थी।

"कल हम लोग नदी में तैरने जाएंगे।" प्रांजल ने मंगला से कहा "साथ चलोगे"।

"हां क्यों नहीं" मंगला ने कहा "कब"।

"दोपहर में पिता जी राजवीर को सुबह कारखाना घुमाने ले जा रहे हैं।"

"ठीक है"। मंगला ने कहा "उसके बाद हम लोग मछली पकड़ने चलेंगे। मैंने कुछ जाल बनाए हैं उन्हें चैक करना होगा।"

लाल चोंच वाले तोतों का एक दल उनके ऊपर से उड़ता हुए गुजर गया और एक वृक्ष की छाया में बैठ कर शोर मचाने लगा। स्वच्छ नीले आकाश में कहीं दो पतंगे गोल गोल घूम रहीं थी और दूर एक सफेद कपोत अपने नीड़ की ओर उड़ता दिखाई दे रहा था।

अध्याय 3

उन्होंने मंगला से विदा ली और जीप पर सवार हो गए। सूर्य की तिरछी किरणें ऊंचे छायादार घने वृक्षों में से होकर चाय की झाड़ियों पर धूप और छाया का मनोहर दृश्य प्रस्तुत कर रही थीं। राजवीर इस दृश्य तथा छायादार वृक्षों को देख कर आनंद से अभिभूत हो उठा।

"ये वृक्ष भी बहुत उपयोगी हैं" मि. बरुआ ने बताया "ये सूर्य की किरणों पर नियंत्रण रखते हैं और चाय के पौधों की पत्तियों पर तापमान 25 से 35 डिग्री सेंटीग्रेड बनाए रखते हैं। यदि पौधों को सीधे ही गर्मी में सूर्य के सामने खुला छोड़ दिया जाए तो पत्तियों पर तापमान बढ़कर 40^0 सेंटीग्रेड हो जाएगा और पत्तियां जल जाएंगी तथा काली पड़ जाएंगी।"

"किन्तु अंकल, क्या सूर्य का प्रकाश पौधों के विकास के लिए जरूरी नहीं है ?" राजवीर ने प्रश्न किया।

"है, किन्तु अधिकता होने से यह नुकसान दायक भी है। ये छायादार वृक्ष उत्तर-पूर्व दिशा में कतार में लगाए जाते हैं। जब पूर्व में सूर्योदय होता है तब वृक्षों के पश्चिमी किनारे से झाड़ियों पर छाया होती है। दोपहर में पूर्व की तरफ की झाड़ियों पर छाया होती है। इस प्रकार सूर्य का प्रकाश समान रूप से मिलता रहता है। ये वृक्ष मजदूरों को भी छाया प्रदान करते हैं।"

"किन्तु ठंड में कैसा होता होगा" राजवीर ने जानना चाहा "क्या वृक्षों की वजह से उन दिनों सूर्य के प्रकाश की कमी नहीं होती।"

"बिल्कुल नहीं। हम छायादार वृक्षों का सावधानी पूर्वक चुनाव करते हैं। उदाहरण के लिए ये वृक्ष अलबीजिया ओडोराटिसीमा हैं। इनके पत्ते अक्टूबर मास में झड़ते हैं। उस समय ठंड की शुरूआत होती है। मार्च के आसपास इन वृक्षों में नई कोंपलें आ जाती हैं और इसके

हरे चिकने पत्ते भीषण गर्मी के दिनों में ठंडी छाया देते हैं।''

''किन्तु राजवीर का समाधान नहीं हुआ, उसने आगे पूछा कि क्या ये जमीन की उत्पादकता को कम नहीं करते, ये तो बड़े बड़े वृक्ष हैं।''

''नहीं ऐसा नहीं है, इसके विपरीत ये नाइट्रोजन गैस और अधिक मात्रा में देते हैं। इससे जो पत्ते झड़ते हैं, वे सड़ जाते हैं और तब उनसे जमीन को अच्छी खाद मिलती है। चाय-बागान की हर चीज उपयोगी होती है। यहां कोई भी कार्य निष्प्रयोजन नहीं किया जाता है। आज बहुत सवाल हो गए। चलो घर चलें जहां एक कप.....,''

''चाय हो जाए।'' प्रांजल ने वाक्य पूरा किया और सब उसकी बात पर हंस पड़े।

रात के गहराते ही बच्चे पहली मंजिल के बरामदे में बैठ गए। हजारों जुगुनू रात में यहां वहां प्रकाश कर रहे थे। रात्रि के घने अंधकार में किसी वृक्ष से उल्लू बोल उठा। दूर नीचे किसी बस्ती से एक झूमर गीत की कोरस स्वर मे लयात्मक आवाज उनके कानों तक पहुंच रही थी।

एका-एक राजवीर ने दूर क्षितिज पर एक अद्‌भुत प्रकाश का गोला देखा। कभी वह सामने दिखाई देता और कभी आंखों से ओझल हो जाता। ज्यों ज्यों वह नजदीक आता जाता वह घटता जाता था।

''हे, वो क्या है!'' राजवीर ने विस्मित होते हुए कहा।

''भूत!'' प्रांजल ने उत्तेजित होकर कहा।

''ये कंजूस, बूढ़े लोगों के भूत होते हैं और जहां सोना गड़ा होता है, उसकी रक्षा करते हैं'' अलका ने गंभीर होकर स्पष्ट किया।

''भूत'' राजवीर ने चौंकते हुए कहा।

''ऊंह'' प्रांजल ने उपहास करते हुए किन्तु अस्थिर मन से बताया ''वे विलओविस्प आग के गोले हैं जिनमें दलदल की गैसें भरी हैं।''

''मूर्ख मत बनाओ'', अलका ने बताया ''बूढ़ी जलेश्वरी ने मुझे बताया था कि उसने ऐसी चीजों को अपनी आंखों के सामने बूढ़ा आदमी बनते देखा है।''

वहां सन्नाटा छा गया जिसे प्रांजल के माता-पिता के आगमन ने तोड़ा।

''चाय-बागान का जीवन तो बहुत ही सीधा साधा और शांत होता होगा।'' राजवीर ने टिप्पणी करते हुए कहा।

"उन्हें चीते के बारे में बताओ" श्रीमती बरुआ ने स्मरण कराते हुए कहा।

"चीता, अंकल" राजवीर ने उत्तेजित होकर कहा।

"कभी कभी जंगली जानवर पास के जंगल से घूमते हुए यहां आ जाते हैं" मि. बरुआ ने कहा और वे इन बागानों में आतंक पैदा कर देते हैं। दो वर्ष पहले मैंने एक ऐसे ही रायल बंगाल टाइगर को मारा था, जो आदमखोर हो चुका था। जंगली हाथी भी कभी कभी तबाही मचा देते हैं।

"पिछले पखवाड़े एक चीता हमारे बागान के मजदूरों को बहुत आतंकित कर रहा था। हमारे एक सरदार सावन ने मुझे बताया कि रात में वह चीता उसके घर के आसपास घूम रहा था और एक बैल उठा ले गया।"

"ये सरदार क्या होता है, अंकल!" राजवीर ने पूछा।

"चाय बागान बहुत बड़ा क्षेत्र है", मि. बरुआ ने स्पष्ट किया "और उसमें हजारों मजदूर काम करते हैं। सुविधा के लिए इसे खंडों में विभाजित किया जाता है जिसमें मजदूरों को समूह में एक विशेष प्रकार का काम दिया जाता है। प्रत्येक समूह का एक नेता होता है जिसे सरदार कहते हैं। यह दल का कप्तान होता है, ऐसा पहले भी होता था।"

"डेडी क्या आपने चीता पकड़ने की कोशिश नहीं की थी।" प्रांजल ने पूछा।

"अरे! हां। मैने बागान में तीन रातें उसकी निगरानी की किन्तु वह नहीं दिखा। मैंने शिकार के लिए एक बकरा भी बांध रखा था किन्तु चीते ने उसकी ओर देखा तक नहीं। वह बहुत ही चालाक जानवर है और उसने अपने पंजों के चिन्ह भी नहीं छोड़े थे। हमारे मजदूर तो इतने डर गए थे कि वे रात में अपने घरों से बाहर निकलने का जोखिम नहीं उठाते थे।"

राजवीर और भी बहुत कुछ जानना चाहता था तभी सब रात्रि भोजन के लिए चल पड़े।

अध्याय 4

अगले दिन सुबह वह तड़के ही नाश्ता करने बैठ गए।

"चाय में और दूध लोगे, राजवीर?" श्रीमती बरुआ ने पूछा।

"नहीं, ठीक है आंटी। मैं वैसे ही कड़क चाय पसंद करता हूँ।"

"तुम्हारे अंकल तो जरा भी दूध नहीं लेते," श्रीमती बरुआ ने मि. बरुआ की ओर देख कर कहा।

"यह सही है" मि. बरुआ ने सहमत होते हुए कहा, "चाय का स्वाद न केवल हर व्यक्ति के लिए बल्कि हर देश में अपनी अपनी पसंद का होता है। हम चाय में चीनी और दूध मिलाते हैं किन्तु चीनी और जापानी खालिस चाय पीते हैं। वे उसमें दूध या चीनी नहीं मिलाते। वे हरी पत्ती वाली चाय पीते हैं।"

"वह क्या होती है" राजवीर ने पूछा।

"परिष्कृत या तैयार चाय बुनियादी तौर पर तीन प्रकार की होती है-आर्थोडाक्स, सी.टी.सी. और हरी पत्ती वाली चाय। हरी पत्ती वाली चाय के मामले में चाय की पत्तियों को वाष्प में सुखाया जाता है जिससे उसके इंजाइम्स मर जाते हैं और फिर उसे सुखाया जाता है। उसमें कोई कीड़े वगैरह नहीं लगते। इस प्रकार पत्तियों के मौलिक संघटक बने रहते हैं।"

"चीनी और जापानी हरी पत्ती की चाय को उबालते हैं और उसे चीनी या दूध मिलाए बिना पीते हैं। कभी कभी उसमें जासमीन के टुकड़े सुगंध पैदा करने के लिए डाल दिए जाते हैं। जापानियों ने चाय पान को एक व्यापक अनुष्ठान बना दिया है और इससे उनके जीवन और संस्कृति पर बड़ा प्रभाव पड़ा है।"

"बनी बनाई चाय भी तो होती है, है न डैडी?" अलका ने पूछा।

"हां, वैसे ही जैसी बनी बनाई काफी। आपको केवल एक कप गर्म पानी में चाय की थैली ही डुबानी होती है। चाय के वैज्ञानिकों ने कार्बोनिक चाय का भी विकास किया है जो बोतलों में पाई जाती है। शीघ्र ही तुम ठंडी चाय की बोतल उसी प्रकार पियोगे जैसे अभी शीतल पेय पीते हो।"

"वे इसके आगे और क्या सोच रहे होंगे।" प्रांजल ने आश्चर्य से भर कर पूछा।

"हर दिन एक नया आविष्कार किया जा रहा है" मि. बरुआ ने व्यक्त किया "अच्छा अब चलो, अब हमें कारखाने के लिए रवाना होना चाहिए।"

उसी समय एक व्यक्ति उनकी तरफ दौड़ता आया। वह ऊंची आवाज में "बड़ा साब। बड़ा साब।" पुकार रहा था।

"ये बिरची है। मंगला का बाप", प्रांजल ने राजवीर को बताया।

"बड़ा साब। माल गोदाम में चोरी हो गई है" बिरची ने बिना रुके कहा "किसी ने चाय की पेटियां चुराई हैं।"

"क्या!" मि. बरुआ ने उत्तेजित होकर कहा "वहां कितनी पेटियां थी।"

"मुझे नहीं मालूम बड़ा साब! डिस्पैच क्लर्क, डेका बाबू ने मुझे आपको लिवाने के लिए भेजा है।"

मि. बरुआ ने टेलीफोन पर थाने में चोरी की रिपोर्ट दर्ज कराई। फिर वह और बच्चे माल गोदाम की ओर रवाना हो गए।

अव्यवस्थित रूप से फैले कारखाने के कंपाउंड को कंटीले तारों की बाड़ी लगा कर घेरा गया था। माल गोदाम मुख्य कारखाने के भवन से कुछ दूरी पर एक कोने में बना था।

माल गोदाम के सामने पहले से ही भीड़ इकट्ठी हो गई थी। वहां बागान के तीनों सहायक मैनेजर भी हाजिर थे। मि. बरुआ को देखते ही डेका डिस्पैचं क्लर्क उनकी ओर दौड़ पड़ा।

"सर। चालीस पेटियां गायब हैं।" उसने कहा।

"मुझे साफ साफ बताओ क्या हुआ" मि. बरुआ ने तीखे स्वर में कहा।

"सर, चाय की पेटियां आज ही सुबह भेजी जानी थीं। कल शाम मैंने स्वयं दरवाजे पर ताला लगाया था। माल गोदाम का यही एक मात्र प्रवेश द्वार है। जब मैंने इसे सुबह खोला तो

माल गोदाम खाली था। आश्चर्यजनक बात तो यह है कि ताले को बिल्कुल नहीं छेड़ा गया है।''

''प्रत्येक पेटी में कितनी चाय थी।''

''पचास किलोग्राम सर।''

''इसका मतलब है 2000 किलोग्राम। सबसे अच्छी क्वालिटी की चाय थी। अतः लगभग 50,000 रु० का नुकसान हुआ।''

''लगभग क्यों, अंकल।'' राजवीर बीच में बोल पड़ा ''क्या इनकी कीमत तय नहीं होती ?''

मि. बरुआ ने शीघ्रता से किन्तु धैर्यपूर्वक उत्तर दिया तुम जानते ही हो राजवीर, कि चाय बागान में नहीं बेची जाती। हम उसे गोहाटी या कलकत्ता के नीलाम केंद्रों पर नीलाम के लिए दलालों को भेज देते हैं। चाय का स्वाद निर्धारित करने वाले उसका नमूना तैयार करते हैं। उसकी कीमत तय करते हैं। वह चाय की पहली कीमत होती है उसके आधार पर ही बोली लगती है और सबसे ऊंची बोली बोलने वाले को चाय बेच दी जाती है।

मि. बरुआ ने एकाएक बिरची चौकीदार को बुलाया।

''कल रात तुमने यहां कोई गड़बड़ी देखी थी।''

''नहीं, बड़ा साब। यहां तो माल गोदाम के पास कोई भी नहीं आया।''

''तुम्हें पक्का पता है, कि तुम ऊंघ रहे थे।''

''आप ऐसा कैसा कह सकते हैं, साब। सावन ने जो चीता देखा था, उसने तो मुझे इन दिनों बहुत अधिक सतर्क कर दिया है।''

वे माल गोदाम के अंदर गए। वह एक ही कमरे की इमारत थी। उसका फर्श चिकनी लकड़ी का बना था। वहां कोई खिड़की भी न थी। रोशनदान पर मोटी मोटी शलाकाएं लगी हुई थीं।

डिस्पैच क्लर्क की टेबिल एक कोने पर थी। उस पर एक कपड़ा बिछा था जिसका एक कोना जमीन को छू रहा था और उससे टेबिल का सामने का भाग दिखता ही नहीं था। बाकी सारा माल गोदाम खाली पड़ा था।

राजवीर और प्रांजल ने एक दूसरे की ओर उत्सुकता से देखा। उन्हें यहां अपनी जानकारी बताने का मौका मिला था, जिसे उन्होंने दर्जनों जासूसी उपन्यास पढ़ पढ़ कर इकट्ठा की थी।

आज उसे व्यवहार में लाने का मौका मिला था।

मि. बरुआ और अन्य लोग गंभीर विचार-विमर्श में लगे हुए थे तभी बच्चे माल गोदाम का एक चक्कर लगा कर पहेली हल करने में लग गए।

प्रांजल माल गोदाम के फर्श पर एक जगह घुटनों के बल बैठ गया और एकाएक उसने चिल्ला कर कहा "राजवीर अलका, इधर आओ।"

फर्श पर कीचड़ से सने पैरों के निशान थे।

"अलका, यहां पिछली बार बरसात कब हुई थी।" प्रांजल ने पूछा।

"लगभग एक सप्ताह पहले।"

"गजब हो गया" प्रांजल ने कहा "एक हफ्ते से बरसात नहीं हुई है, बाहर की जमीन पत्थर की तरह कड़ी है, फिर भी ये कीचड़ से सने पैर के निशान। किसी के जूतों के तल्ले में गीली कीचड़ लगी हुई थी।"

"यह एक महत्वपूर्ण सुराग हो सकता है।" राजवीर ने स्वीकार किया।

वे यहां वहां निष्फल प्रयास करते रहे, तभी राजवीर को पीली मिट्टी का एक ढेला मिला। वे उसे मि. बरुआ के पास ले गए।

"अंकल! बागान में किस प्रकार की मिट्टी है।"

"रेतीली और तीखी" मि. बरुआ ने थोड़ा विस्मित होते हुए उत्तर दिया। फिर धैर्यपूर्वक उन्होंने स्पष्ट किया "दोमट मिट्टी में रेत और धूल का बराबर बराबर अनुपात होता है। रेतीली

दोमट मिट्टी वह है जिसमें धूल की अपेक्षा रेत का प्रतिशत अधिक होता है। चाय के लिए यह आदर्श मिट्टी है क्योंकि इसमें से पानी छन कर अंदर तक पहुंच जाता है।''

''तो यह पीली मिट्टी का ढेला माल गोदाम के फर्श पर क्या कर रहा था?''

मि. बरुआ ने मिट्टी की जांच की, निश्चित रूप से वह बागान की मिट्टी नहीं थी। वह इस रहस्य को सुलझाने में लगे हुए थे कि पुलिस आ गई।

उन्होंने मिट्टी के उस टुकड़े को राजवीर को लौटा दिया और पुलिस स्टेशन के थाना इंचार्ज श्री कोकोती का स्वागत करने के लिए मुड़ गए। राजवीर ने उस मिट्टी को कागज के एक टुकड़े में सावधानी पूर्वक लपेटा और उसे अपनी जेब मे खिसका लिया।

पुलिस थानेदार कोकोती इस बात से बड़ी उलझन में पड गया कि माल गोदाम का दरवाजा खोले बिना चोर उसमें कैसे घुस गए।

''मैं चारों तरफ मौका मुआयना करूंगा और चोरी का पता लगाऊंगा'' उसने मि. बरुआ से कहा।

''हमें कुछ सुराग मिले हैं'' राजवीर ने एक ही सांस में कहा। ''क्या आप उन्हें देखना चाहेंगे।''

''डैडी, क्या हम लोग अन्वेषण में कोई मदद कर सकते हैं।'' प्रांजल ने पूछा।

कोकोती ने नाक भौं सिकोड़ कर कहा, ''अपराधियों को पकड़ना बच्चों का खेल नहीं है। कृपया इन बच्चों से कहिए कि वे मेरे काम में हस्तक्षेप न करें।''

''ये ठीक कहते हैं'' मि. बरुआ ने कहा, ''बच्चों, तुमको सरकारी जांच पड़ताल में हस्तक्षेप नहीं करना चाहिए। तुम लोग तैरने क्यों नहीं चले जाते। वहां तुम लोग जाने वाले थे, न। मैं आज तुम लोगों को कारखाने की सैर नहीं करा सकता, अच्छा।''

अलका और दोनो लड़के बाहर चले आए। वे नाराज थे और झिड़की से दुखी भी।

अध्याय 5

बच्चों को कोई काम तो था नहीं, अतः उन्होंने तैरने के लिए नदी की ओर जाने का निश्चय किया। बाहर उन्हें मंगला मिल गया और वह भी साथ हो लिया।

बंगले की ओर जाते समय रास्ते में उन्होंने मंगला से अपने सुराग के बारे में बताया जो उन्हें अभी तक मिला था। उन्होंने श्रीमती बरुआ को अपने कार्यक्रम के परिवर्तन के बारे में बताया और टीपू को लेकर वे नदी की ओर चल पड़े। नदी ढेकियाबाड़ी बागान की दक्षिणी सीमा पर बहती थी।

सनसनीखेज चोरी से काम पर कोई प्रभाव नहीं पड़ा। चाय पत्ती तोड़ने वाले चाय बागान में अपना काम करते रहे।

"तुम्हारे ये पत्ती तोड़ने वाले बहुत सुस्त हैं" राजवीर ने टिप्पणी की। "मैं इनसे आधे समय में दुगुनी पत्तियां तोड़ सकता हूं।"

मंगला को बहुत हंसी आई। वह हंसते हंसते लोटपोट हो गया।

"हो ! हो ! तुम ऐसा सोचते हो, आओ। ये सुखमनी है, मेरी बुआ। देखते हैं तुम दोनों में से कौन जल्दी पत्तियां तोड़ सकता है, तुम या बुआ।"

"राजवीर पत्तियां तोड़ना चाहता है उसे पत्तियां तोड़ने दो। तोड़ने दोगी न।"

वे चाय की झाड़ियों में घुस गए। पत्ती तोड़ने वाली बूढ़ी औरतों ने उन्हें देख कर मुस्करा कर स्वागत किया। राजवीर पत्तियां तोड़ने को तैयार हो गया। उसने दोनों मुट्ठियों से पत्तियों को एक साथ नोच लिया और उससे सारी पत्तियां टूट गई।

"इस तरह नहीं, छोटा साब।" सुखमनी ने कहा "आप प्रत्येक पत्ती को नहीं तोड़ें। आप

केवल दो पत्तियों को पकड़ें और उसके तने को पकड़ें। दूसरी और तीसरी पत्ती के बीच के तने को तोड़ दें, देखिए ऐसे।''

उसने सधी उंगलियों से दो पत्तियों का एक तना तोड़ा और उसे राजवीर को पकड़ा दिया। पत्तियां चूंकि नई कोंपलें थीं, वे बड़ी नाज़ुक और चिकनी थीं। उसका तना वास्तव में अंकुर नहीं था बल्कि वह एक ऐसी पत्ती थी जो अभी तक खिल नहीं पाई थी।

''हर साल बरसात के दौरान नई कोंपलें फूटती हैं।'' सुखमनी ने बताया ''ये और न कि पुरानी पत्तियां, चाय बनाने के काम आती हैं। यदि आप दो से अधिक पत्तियां और एक कली तोड़ेंगे तो उससे चाय की क्वालिटी पर बुरा असर पड़ेगा।''

''इसलिए चाय की झाड़ियों की कटाई छटाई की जाती है'' मंगला ने जोड़ा। ''यदि चाय के पौधे की छटाई न की जाए तो वह एक बड़ा पेड़ हो जाएगा। छंटाई से ये पौधे झाड़ी ही बने

रहते हैं और इससे इसकी शाखाएं भी अधिक होती हैं और इससे पत्तियां भी काफी मात्रा में तोड़ी जाती हैं।''

''यह ठीक कहता है'' सुखमनी ने स्वीकार किया। ''झाड़ियों से हमारी कमर भी सीधी रहती है'' और हम आसानी तथा कुशलता पूर्वक पत्तियां तोड़ सकती हैं।''

''अब मैं अपना मुंह बंद रखूंगा'' राजवीर ने वायदा किया और वे चल पड़े।

चाय बागान के किनारे की तरफ जो रास्ता जाता था वहां की जमीन पर चाय की झाड़ियां नहीं थीं। यहां पर ऐसे पौधे थे जिनकी पत्तियां चौड़ी पांखुड़ी के आकार की थीं।

''वह ग्वाटेमाला है'' प्रांजल ने उधर संकेत करते हुए बताया ''यह जमीन को तैयार करने के लिए उपयोग में लाई जाने वाली हरी फसल है। तुमने क्लोन नर्सरी में जो चाय की कलमें देखी थीं उन्हें यहां लगाया जाएगा। ग्वाटेमाला, मिमोसा और साइट्रोनेला जैसी हरी फसलें मिट्टी की उर्वरा के लिए आवश्यक आण्विक अवयय तैयार करते हैं और मरी हुई बेकार मिट्टी में फिर से जान डाल देते हैं, उसे उर्वरा बना देते हैं।''

''साइट्रोनेला? अरे यह वही घास तो नहीं है जिससे तेल निकालते हैं?''

''जी हां, यह वही साइट्रोनेला है जिससे भीनी भीनी नींबू की खुशबू आती है और जिसका उपयोग साबुन और सुंगध (सेंट) बनाने में करते हैं। अनेक बागानों में आजकल यह वाणिज्यिक उपयोग के लिए उगाई जाती है।''

थोडी देर में वे चाय बागान की सीमा पर पहुंच गए जहां तारों की बाड़ लगाई गई थी। वे लोहे के फाटक पर चढ़ गए और दलदली जमीन को पार करके नदी के पास पहुंच गए।

बाढ़ से बचने के लिए नदी के आसपास के किनारे ऊंची मिट्टी के बनाए गए थे। बच्चे उस पर चढ़ गए। राजवीर सबसे पहले ऊपर पहुंचा तो वह आश्चर्य से भर उठा और वहां की मिट्टी देखने के लिए झुका।

उसने अपनी पाकेट से वह मिट्टी निकाली जो उसे माल गोदाम में मिली थी। अब शक की कोई गुंजाइश नहीं थी। दोनों मिट्टियां एक जैसी थी। पीली मिट्टी किस्म की।

''चोर यहां आए थे।'' राजवीर ने उत्तेजित होकर कहा।

''जमीन तो कड़ी है,'' प्रांजल ने टिप्पणी की ''जब तक कि मिट्टी गीली न हो, वह जूतों में नहीं चिपक सकती।''

''इसका एक ही मतलब हो सकता है'' अलका ने अपना तर्क रखा कि चोर किसी समय नदी में जरूर गये होंगे।

लड़कों ने भविष्य के लिए इस नए सुराग को मन ही मन में नोट किया और पानी में छलांग लगा दी। अलका और टीपू तट पर ही घूमते रहे।

एकाएक अलका का पैर एक पहाड़ी के कोने से टकरा गया और वह लड़खड़ा कर गिर गई। वह चीख पड़ी और लुड़कते हुए तट की ओर गिरने लगी और वह लगभग नदी में गिरने ही वाली थी।

किन्तु अंतिम क्षणों में, उसके असहाय हाथों ने एक झाड़ी पकड़ ली जो उतार के अंत में उगी हुई थी। उसने उसे जोर से जकड़ लिया और लटक गई। नीचे नदी की तेज धारा बह रही थी।

अलका की चीख और टीपू के भौंकने की आवाज सुन कर दोनों लड़के जल्दी से नदी से बाहर निकले।

''अलका पकड़े रहना'' प्रांजल ने वहीं से चिल्ला कर कहा ''हम आ रहे हैं।''

किन्तु जब तक वे अलका के पास पहुंचते, झाड़ी अलका का वजन न सम्हाल पाई और उखड़ गयी। अलका नदी में गिर गई।

सहमे हुए बच्चे ''छपाक'' की आवाज सुनने के लिए रुके किन्तु वह केवल 'ढप्प' की आवाज थी। क्षण भर बाद अलका उठ खड़ी हुई, उसका चेहरा डर से पीला पड़ गया था किन्तु उसे कोई चोट नहीं आई।

बच्चे उसकी ओर अविश्वास से भर कर घूरते रहे। अलका के घुटने तक पैर झाड़ियों में डूबे हुए थे ऐसा लगता था कि वह पानी में खड़ी है।

जब वे उसके पास पहुंचे तो रहस्य खुल चुका था। लकड़ी की एक नाव किनारे पर बंधी हुई थी और झाड़ियों की घास फूस से यत्नपूर्वक छुपाई गई थी। अलका सीधे उसी में गिर पड़ी थी।

''ईश्वर की कृपा से तुम बच गई।''

''तुमने तो हमें डरा ही दिया था।''

''यह जगह तो मुझे संदेहास्पद मालूम होती है।'' मंगला ने चिल्ला कर कहा।

"क्यों" प्रांजल ने पूछा "नदी के किनारे तो नाव बंधी रहती है, इसमे संदेह की क्या बात है। ऐसी तो दर्जनों नावें यहां बंधी होंगी।"

"ये तो ठीक है" मंगला ने जवाब दिया "कोई अपनी नाव इस तरह नहीं छिपाता जैसी यह छिपाई गई है।"

"हां अब तेरी बात मेरी समझ में भी आ रही है" राजवीर ने कहा "हम लोगों का यहां से जल्द ही हट जाना ठीक होगा।"

उन्होंने जल्दी जल्दी नाव को झाड़ियों से ढंक दिया और घर की ओर रवाना हो गए। जब वे बंगले के पास पहुंचे तो वे निश्चित कर चुके थे कि कोई महत्वपूर्ण बात हो गई है। चाय तोड़ने वाले मजदूर अपना काम छोड़कर समूह बना कर खड़े हुए बात कर रहे थे। चेहरों से उत्तेजना साफ साफ झलक रही थी।

सुखमनी दौड़ती हुई मंगला के पास आई। वह बहुत दुखी मालूम पड़ती थी।

"मंगला। पुलिस तुम्हारे पिता और डेका बाबू को गिरफ़ार करके ले गई है। उनके विचार से दोनों में से किसी ने चाय की पेटियां चुराई हैं।"

मंगला यह सुन कर भौंचक्का रह गया। उसकी आंखों से आंसू बहने लगे। प्रांजल ने उसके कंधे पर हाथ रखा और उसे एक तरफ ले गया।

"हमारे बंगले के पीछे जो टूल शेड है, वहां 3 बजे आ जाना" उसने धीमे स्वर में फुसफुसाकर कहा "हम लोग वहां बैठकर आगे की लड़ाई के बारे में विचार करेंगे।"

अध्याय 6

'मैं निश्चित रूप से कह सकता हूं कि डेका और बिरची निर्दोष हैं'' दोपहर के खाने के समय मि. बरुआ ने कहा ''वे इस बागान में बीस साल से पहले से काम कर रहे हैं।''

''तो फिर पुलिस ने उन्हें गिरफ़्तार क्यों किया।'' प्रांजल ने कहा।

''पुलिस थानेदार इस निष्कर्ष पर पहुंचा कि माल गोदाम में सामने का दरवाजा खोले बिना कोई नहीं घुस सकता। दरवाजा अवश्य खोला गया होगा और पेटियां उठा ले जाने के पश्चात बंद कर दिया गया होगा। इसीलिए उसने डेका को गिरफ़्तार किया क्योंकि उसके पास चाबियां थीं और बिरची चौकीदार था।''

प्रांजल कुछ कहने वाला ही था कि राजवीर ने उसे चेतावनी भरा संकेत देकर चुप करा दिया।

बाद में दोपहर में सारे बच्चे आंगन में बने टूल शेड में इकट्ठे हुए। मंगला बहुत दुखी था।

''हम लोग सबसे पहले तथ्यों की जांच करें और फिर अपने निष्कर्ष निकालें'' राजवीर ने आग्रह किया।

''मान लो डेका निर्दोष है'' प्रांजल ने बात शुरू करते हुए कहा ''तो चोरों के पास ताला खोलने के लिए चाबियों का डुप्लीकेट सैट अवश्य होगा।''

''किन्तु मेरे पिता जी ने भी तो उन्हें देखा होता और सीटी बजाई होती'' मंगला ने तर्क दिया।

''अतः हम इस निष्कर्ष पर पहुंचे कि चोर सामने के दरवाजे से नहीं घुसे'' प्रांजल ने कहा।

सभी ने सहमति में सिर हिलाए।

"किन्तु अंदर जाने का और कोई दूसरा रास्ता भी तो नहीं है," अलका ने कहा। "हाँ, ये हो सकता है कि वे छत या बगल की दीवार को तोड़ कर अंदर घुसे हों, किन्तु ऐसा भी तो नहीं हुआ है।"

"इसके सिवा और कोई रास्ता नहीं हो सकता कि वे जमीन खोद कर आए हों और फर्श से घुसे हों," राजवीर ने सुझाव दिया।

"हां ऐसा हो सकता है।" प्रांजल ने उत्साह से भरकर जोर से कहा। "याद है तुम्हें कीचड़ भरे पैरों के निशान, जबकि एक हफ्ते से बरसात नहीं हुई तो भी वे पैर के निशान ताजे और कीचड़ से सने थे।"

"हां।" मंगला ने कहा। "ऐसी मिट्टी तो जमीन के अंदर किसी सुरंग की हो सकती है। इससे स्पष्ट हो जाएगा कि आखिर पिता जी को कोई क्यों नहीं दिखाई दिया।"

"किन्तु हमने तो माल गोदाम की तलाशी ली थी," अलका ने कहा "वहां तो ऐसा कुछ नहीं दिखा, जिससे सुरंग का पता चलता हो।"

"किन्तु हमने भी ऐसा नहीं देखा" राजवीर ने स्वीकार किया "हम अब देखेंगे। मंगला, क्या हम लोग माल गोदाम में फिर से जा सकते हैं।"

"हां क्यों नहीं। दरवाजे खुले हैं। माल गोदाम खाली पड़ा है इसलिए किसी ने उसे बंद नहीं किया है।"

वे सभी एक साथ निकल पड़े। जब वे माल गोदाम के पास पहुंचे तो वे निश्चिंत हो गए, क्योंकि दरवाजा खुला था, वहां कोई नहीं था।

वे अंदर जाकर सावधानी पूर्वक फर्श का मुआयना करने लगे।

एकाएक राजवीर का चेहरा खुशी से चमक उठा "अहा।" वह खुशी से चीख उठा। "बुनियाद तो यहां है प्रांजल, जरा इस डिस्पैच टेबल के नीचे तो देखो।"

उन्होंने सुबह फर्श की तलाशी ली थी किन्तु डिस्पैच टेबिल को हटाने के बारे में और उसके नीचे देखने के बारे में सोचा ही नहीं था। उन्होंने वह काम अब किया।

उन्होंने देखा कि उस पर एक छोटा सा वर्गाकार भाग कटा हुआ था वह इतनी अच्छी तरह काटा गया था कि वे संभवत उसे देख ही नहीं पाते यदि वे उसे नहीं ढूंढते।

मंगला ने एक छोटा सा चाकू निकाला और उसे उस कटे स्थान पर घुसेड़ दिया। उसने उस लकड़ी के टुकडे को इतना ऊपर उठा दिया कि उसमें उसकी अंगुलियों के जाने के लिए काफी जगह हो गई। उसके किनारे को उसने तेजी से पकड़ा और सारे भाग को ऊपर उठा लिया।

''ओफ!'' अलका उत्तेजना से चिल्ला उठी। उसे फर्श के नीचे एक गहरी चौड़ी सुरंग दिखाई दी।

चोरो ने लकड़ी के तखतों को चीर कर छत का द्वार बनाया था जिसे ठेलकर वे माल गोदाम में प्रवेश कर जाते थे। चाय की पेटियों को हटाने के पश्चात् उन्होंने छत के द्वार को छिपाने के लिए डिस्पैच टेबिल को फिर से उसी जगह रख दिया था जहां वह था। सुरंग में प्रवेश करने वाले अंतिम चोर ने उसे पीछे से बंद कर दिया था।

मंगला ने छत द्वार)ट्रेपडोर(को यथास्थान करते हुए कहा ''तो यह बात थी।''

''मिट्टी का टुकड़ा और छिपाई गई नाव का इससे गहरा संबंध है'' राजवीर ने कहा। ''चोरों ने माल गोदाम तक सुरंग बनाई और पेटियां निकाल कर नदी तक ले गए। नाव का उपयोग उन पेटियों को नदी के दूसरे किनारे तक पहुंचाने के लिए किया गया होगा। उन पेटियों को ले जाने के लिए वहां कोई ट्रक भी इतंजार कर रहा होगा।''

''हमें सुरंग का दूसरा सिरा भी ढूंढना चाहिए,'' मंगला ने कहा।

''सुरंग में से ही क्यों न चलें।'' राजवीर ने सुझाव दिया।

"इससे हम लोग चोरों तक सीधे पहुंच जाएंगे। ऐसा करना सुरक्षा की दृष्टि से ठीक नहीं होगा।" मंगला ने कहा।

"हम और कैसे पता कर सकते हैं।" अलका ने पूछा।

प्रांजल ने डिस्पैच टेबिल से कागज का एक टुकड़ा लिया और पेंसिल उठा ली।

"देखो" उसने कहा वह कागज पर एक हलका सा स्कैच उतारने लगा "स्वाभाविक है कि चोरों ने सुरंग बनाना दक्षिण से आरंभ किया होगा, जहां नदी है। सुरंग बहुत दूर नहीं हो सकती, ज्यादा से ज्यादा सौ मीटर दूर होगी। अतः यदि हम माल गोदाम से नाव तक सीधी रेखा खींचें और माल गोदाम से 50 से 100 मीटर के क्षेत्र में तलाश करें तो हमें सुरंग के मुंह का पता लग सकता है।"

वे माल गोदाम से सावधानी पूर्वक बाहर निकले और बताई गई दिशा की ओर बढ़ गए। काम का समय समाप्त हो गया था। अतः चाय की झाड़ियों के पास कोई नहीं था। वे चुपचाप आगे बढ़ने लगे किन्तु उनकी आखें चारों ओर सतर्कता से देख रहीं थीं। मंगला ने आखिर वह जगह ढूंढ ली।

सुरंग का मुंह एक गड्ढा खोद कर बनाया गया था। बांस का एक फ्रेम था जिसको कीचड़ से पोत दिया गया था और उससे सुरंग का मुंह ढंक दिया गया था। छोटी छोटी झाड़ियों को फ्रेम के ऊपर लगा दिया था जिससे कि छिपाई गई जगह बिल्कुल दिखाई न पड़े।

मंगला उस गड्ढे में कूद पड़ा और उसने ढन को निकाल दिया, इशारे से लड़कों को बुला कर दिखाया और ढक्कन फिर से लगा दिया।

"चलो यहां से जल्दी निकल चलें।" उसने तेजी से कहा "कोई हमें देख न ले"।

वे तेजी से चलते हुए और लगभग दौड़ते हुए टूल शेड में पहुंच गए।

"हमें पिता जी को इसी समय बताना चाहिए" प्रांजल ने फुसफुसाते हुए कहा "वह पुलिस को बता सकते हैं और डेका तथा मंगला के पिता को छुड़ा सकते हैं"।

"अभी नहीं", राजवीर ने गुनगुनाते हुए कहा "चोरों को अभी इसी धारणा में रखना चाहिए कि वे सुरक्षित हैं।"

"यह ठीक है" मंगला ने तत्परता से कहा। "हमें और अधिक साक्ष्य इकट्ठे करने चाहिए।"

''किन्तु कहां से शुरू किया जाए।'' प्रांजल ने पूछा।

''चुराई गई चाय बहुत ही बढ़िया क्वालिटी की थी'' मंगला ने शांत स्वर में अपना मत व्यक्त करते हुए कहा। ''किन्तु चोरों को इस बात का पता कैसे चला होगा।''

''तुम कहना क्या चाहते हो।''

''सीधी बात है, चोरों के साथ कोई ऐसा आदमी भी है जो चाय बागान में काम करता है।''

''सुरंग खोदने में भी समय लगा होगा'' अलका ने संकेत दिया। ''सुरंग से मिट्टी निकाली गई होगी और दूसरी जगह ले जाई गई होगी। आश्चर्य की बात तो यह है कि उन लोगों को खुदाई करते किसी ने नहीं देखा।''

''इससे स्पष्ट है कि उन्होंने रात में काम किया है'' राजवीर ने उत्तेजित होकर कहा।

उसी समय मंगला के दिमाग में भी कोई बात कौंधी।

''अरे बाबा।'' उसने लगभग चिल्लाते हुए कहा हालांकि उसने उसे धीमे स्वर में बोलने की कोशिश की थी। ''यह वही हो सकता है।''

''हुश।'' सबने एक साथ मुंह पर उंगली रख कर कहा।

''सावन नामक एक सरदार है। वही सह-अपराधी हो सकता है।''

''वही जिसके बैल को चीता उठा ले गया था।'' प्रांजल ने पूछा।

''अच्छा तो चीते के बारे में तुमने भी सुन रखा है। सावन ने ही यह कहानी फैलाई है जिससे बागान के मजदूर डर कर रात में अपने घर से न निकलें। अभी तक किसी ने भी चीता नहीं देखा।''

''हां, यही तो पिता जी कह रहे थे। उसके आने के बारे में उसके पंजे के निशान तक नहीं मिले थे।''

''हो सकता है,'' मंगला ने सुझाव दिया कि कोई चीता ही न हो। सावन ने कहानी इसलिए फैलाई हो कि जिससे चोर बिना किसी विघ्न के अपनी सुरंग खोद सकें।

वे चुपचाप कुछ समय तक सोचते रहे।

''सावन फैक्ट्री में पैकेजिंग मशीन पर भी तो काम करता है'' मंगला ने अपना तर्क आगे बढ़ाते हुए कहा ''चाय की पैकिंग करते समय वह चाय की क्वालिटी के बारे में भी तो जानता होगा।''

अध्याय 7

मि. बरुआ दूसरे दिन सुबह राजवीर और अन्य बच्चों को कारखाना दिखाने ले गए।

"यहां तो सब अद्भुत सा लगता है" राजवीर ने साथ साथ चलते हुए कहा "यह हरी पत्ती काली या कत्थई रंग में कैसे बदल जाती है।"

"वास्तव में हरी पत्तियों की नमी को पूरी तरह से निकालने के लिए ऐसा किया जाता है। साथ ही इससे इसके रंग और गंध को उभार दिया जाता है। इसमें किसी रसायनिक द्रव्य को नहीं मिलाया जाता। मशीन का प्रयोग प्रक्रिया को तेजी से कराने, क्वालिटी पर नियंत्रण रखने और अधिकाधिक उत्पादन करने के लिए किया जाता है। वास्तव में तुम घर में चाय बना सकते हो।"

"घर में कैसे।" राजवीर ने पूछा।

"क्यों नहीं। अपरिष्कृत रूप से ही सही। ठीक उसी तरह जैसे प्राचीन काल में बनाई जाती थी।"

"अंकल, यह सब हरी पत्ती की चाय के साथ लागू होता है। किन्तु आपने सी.टी.सी. और आर्थोडाक्स चाय के बारे में बताया था, क्या वे अलग किस्म की चाय हैं।"

"बिल्कुल। आर्थोडाक्स की सुगंध अच्छी है, सी.टी.सी. बहुत पानी खाती है. आर्थोडाक्स को पकाते समय उबालना पड़ता है, जब कि सी.टी.सी. को छानना पड़ता है। उनके बनाने में जो अंतर है वह मैं तुम्हें कारखाने में दिखाऊंगा।"

कारखाने के द्वार पर दरबान ने फुर्ती से सलाम ठोककर उनका स्वागत किया। मि. बरुआ ने बिना दीवारों वाले केवल छत वाले शेड के बगल में ले जाकर जीप रोक दी। उस निर्माण के

अंदर लगभग आधे दर्जन एक के ऊपर एक चबूतरे बने हुए थे।

"ये चेंग कहलाते हैं। बागान से तोड़ी गई चाय की पत्तियों को यहां तौला जाता है और इन चेंगों पर फैला दिया जाता है। कुछ घंटों के भीतर ही पत्तियां मुरझाने लगती हैं। उनसे लगभग 30 से 40 प्रतिशत की नमी निकल जाती है। इसे प्राकृतिक रूप से सुखाना कहते हैं।"

पास में इसी प्रकार का एक और शेड था। किन्तु वहां टाट से मढ़े चबूतरों की बजाए कंक्रीट के चबूतरे थे और उन पर मोटे तार की जालियां लगी थीं जिन पर पत्तियां फैलाई गई थीं। शक्तिशाली बिजली के पंखे प्रत्येक नांद के सिरों में तेजी से घूम रहे थे।

"इसे नियंत्रित रूप से सुखाना कहते हैं।" मि. बरुआ ने स्पष्ट किया "प्राकृतिक मुरझाने में बहुत समय लगता है, विशेष रूप से नमी वाली जलवायु में इसलिए नियंत्रित ताप पर गर्म हवा इन नांदो में से भेजी जाती है।"

बच्चे मि. बरुआ के पीछे पीछे कारखाने में गए। कारखाने के अंदर दर्जनों मशीनों की खटपट की आवाज आ रही थी। यदि उनमें से किसी को दूसरे से कुछ कहना हो तो उसे ऊंची आवाज में बोलना पड़ता है। वहीं चाय की पत्तियों की तीखी सुगंध उनके नथुनों से टकराई।

मि. बरुआ ने तीन पायों वाली एक मशीन की ओर संकेत किया। "यह रीलिंग टेबिल है जहां मुरझा गई पत्तियों को चूरा बनाया जाता है या मोड़ा जाता है। जो भी रस पत्तियों से निचोड़ कर निकलता है उसे फैला दिया जाता है।"

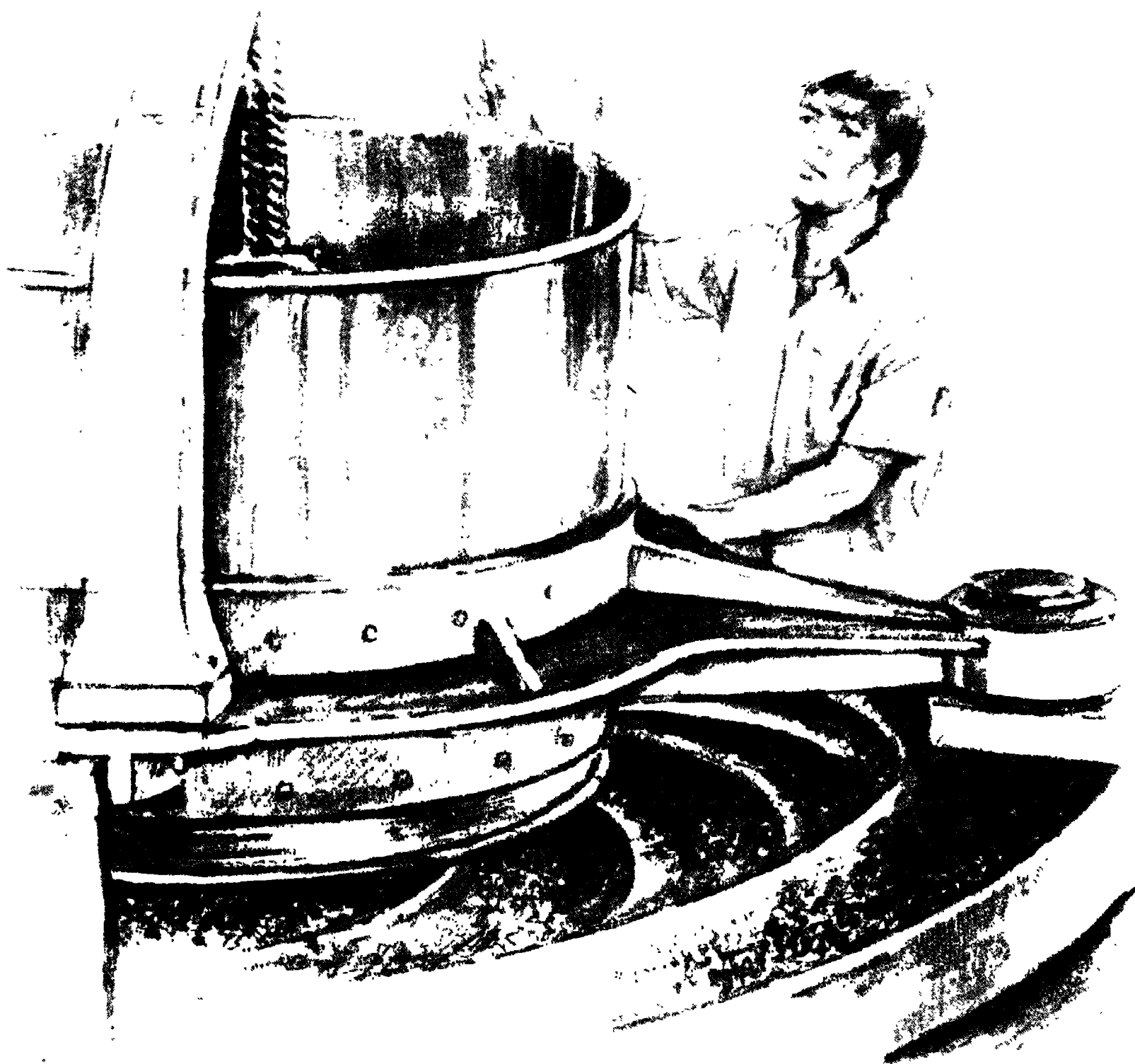
चिपटी या गोल की गई पत्तियों को छानने के लिए उन्हें एक जाली में डाला जाता है। यह पाइप के आकार की मशीन होती है जो लगातार चलती रहती है।

"और यह छन्ना (सिफ्टर) है," मि. बरुआ ने बताना जारी रखा। "यह अच्छी तरह गोल हुई पत्तियों को छानकर अलग करता है। इस जगह सी.टी.सी. और आर्थोडाक्स की तकनीक में भेद है। आर्थोडाक्स चाय बनाने के लिए छानी गई पत्तियों को सीधे फरमेंटिंग रूम में ले जाया जाता है। सी.टी.सी. चाय को उन्हें उसके पहले एक और मशीन में डाला जाता है।"

"सी.टी.सी. का क्या अर्थ होता है अंकल।"

"कर्लिंग, टियरिंग और क्रशिंग। अर्थात पत्तियों को गोल घुंघराले बनाना, फाड़ना और चूर चूर करना। सी.टी.सी. मशीनें वास्तव में यही काम करती हैं।" उसी समय अच्छी तरह कतरी हुई चाय का गूदा मशीन के आउटलैट से बाहर निकला और अल्युमिनियम की ट्रे में ढेर

सारा गिर गया।

"जैसा कि तुम सी.टी.सी. विनिर्माण में देखते हो, पत्तियों को पूरी तरह काटा जाता है और उसका रस निचोड़ कर बराबर बराबर मिलाया जाता है। इससे पत्तियों में रंग आ जाता है। आर्थोडाक्स में जिसमें पत्तियों को नहीं काटा जाता है, रस धीरे-धीरे बाहर निकलता है इस लिए उसमें सुगंध बनी रहती है।"

वे फरमेंटिंग रूम (सेंक कक्ष) में गए जहां पत्तियों को नांदों के ऊपर फैलाया गया था। सेंक स्वाभाविक रूप से दिया जाता है। राजवीर आश्चर्य से हरी पत्तियों को कत्थई रंग में बदलते देखता रहा।

"पूरी तरह से सेंक देने में एक घंटा लग जाता है" मि. बरुआ ने सधे हुए गाइड की तरह बताना जारी रखा "जिस आश्चर्य का तुमने उल्लेख किया था वह यहां होता है। जारणक्रिया से हरा रंग गायब हो जाता है। आक्सीजन वायु रसायनों से मिल कर पत्तियों पर प्रभाव डालती है और उनके रंग और गंध बदल देती है।"

अगले कमरे में पत्तियां सुखाई जाती थीं। उसमें पत्तियां सुखाने की बड़ी बड़ी मशीनें लगी थीं। कोयले की आग से या चाय सुखाने वाली तेल की भट्टी में से गूदा बनी चाय के बीच से बहुत अधिक तापवाली हवा भेजी जाती है।

"गर्म हवा पत्तियों में शेष नमी को भी समाप्त कर देती है और परिष्कृत उत्पादन को कुरकुरा और सूखा बना देती है। सूंघो इसे!" मि. बरुआ ने मुट्ठी भर चाय उठा कर राजवीर के हाथ में पकड़ा दी। पत्तियां गरम थीं और उनसे भीनी खुशबू निकल रही थी।

"अब केवल इतना काम रह गया है" मि. बरुआ ने बात जारी रखते हुए कहा "कि चाय के विभिन्न ग्रेडों में जैसे आरेंज पीकाय, पीकाय फेनिंग, ब्रोकन आरेंज पीकाय आदि में छांटा जाए और उसे पैक कर दिया जाए। यह छंटाई इन जालियों, कीप (फनेल) जैसी इन मशीनों से किया जाता है जिनके आखिरी उठे हुए उस सिरे तक चाय छनकर जाती रहती है। विभिन्न प्रकार के ग्रेडों में छांटने के लिए विभिन्न आकार और साइज वाली जालियों का उपयोग किया जाता है।"

अंततः वे उस कमरे में पहुंचे जहां चाय पैक की जा रही थी। एक सांवला सा आदमी जिसके चेहरे पर चेचक के भद्दे दाग थे, खनित्र)झाबा(से दोलन (वाइब्रेटिंग) मशीन पर रखी पेटियों में चाय भर रहा था।

मंगला ने जो विवरण दिया था उससे बच्चे उस व्यक्ति को पहचान गए। वह सावन था। वास्तव में सावन सरदार ही इस बात का सबसे अच्छा जानकार था कि कारखाने में किस क्वालिटी की चाय भरी जा रही है।

"चाय की सबसे बड़ी दुश्मन नमी है," मि. बरुआ इस बात से बेखबर थे कि बच्चों का ध्यान तो कहीं और लगा है, वह बताते जा रहे थे कि "यह पैकिंग मशीन, जो लगातार दोलतो

रहती है, यह सुनिश्चित करती है कि चाय अच्छी तरह पैक की जा रही है और चाय के बीच हवा की कोई गुंजाइश नहीं है। चाय की उन पेटियों में अंदर की तरफ अल्युमिनियम की पतली चादर का अस्तर लगा होता है जिससे नमी के अंदर आने से बचाव होता है।''

जैसे ही पेटी भरती थी कोई मजदूर उस पर ढक्कन लगा कर कील ठोक देता था। फिर पेटी पर उसके ग्रेड, क्वालिटी और चाय के बागान का नाम स्टेंसिल द्वारा छाप दिया जाता था।

''उत्पादन अच्छी क्वालिटी का हो रहा है। यह सुनिश्चित करने के लिए हम प्रति दिन चाय का सैंपल लेते हैं और कारखाने में ही उसकी जांच करते हैं।'' मि. बरुआ ने आगे बताया ''छोटे से घूंट से ही मैं यह बता सकता हूं कि चाय अच्छी है या बहुत ज्यादा सिंकी है या जल गई है।''

मशीनों की लगातार आवाज से वे अब तक अभ्यस्त हो गए थे और जब वह कारखाने से बाहर निकले तो उन्हें बाहर का शांत वातावरण बड़ा अजीब लगा।

कारखाने के भोंपू ने सुबह के काम की समाप्ति की सूचना दी। वे लोग अपने पीछे साइरन की तेज आवाज को छोड़ कर जीप पर रवाना हो गए।

अध्याय 8

बागान के मजदूरों का काम 4 बजे समाप्त हुआ। 5 बजे शाम को बच्चे मंगला के साथ बस्ती की ओर रवाना हुए जहां मजदूर रहते थे।

फूस के छप्पर वाली झोपड़ियों की क़तारें बनी हुई थीं। हर झोपड़ी के आगे एक छोटा सा आंगन था। थोड़ी थोड़ी दूर पर पाताली नल लगे हुए थे जहां औरतें झुंड बना कर खड़ी बातें कर रही थीं या कपड़े धो रही थीं जब कि छोटे छोटे बच्चे घुटने के बल यहां वहां घूम रहे थे और खेल रहे थे। पड़िया व कुत्ते धूल भरी सड़क पर सुस्ता रहे थे और सुअर का एक बच्चा कीचड़ में लोट रहा था।

लेबर क्लब के बगल से बने मैदान में कुछ युवक फुटबाल खेल रहे थे। अनेक झोपड़ियों से रेडियो के संगीत की धीमी आवाज सुनाई दे रही थी।

''हम लोगों को संगीत और नृत्य बहुत पसंद है और जब कभी अवसर आता है, हम लोग उसका भरपूर मजा लेते हैं'' मंगला ने अन्य साथियों को बताया।

बच्चों का ध्यान एक विशेष झोपड़ी में चल रही गतिविधि पर गया। वे वहीं रुक गए। झोपड़ी के द्वार को रंगीन कागज की झंडियों से अच्छी तरह सजाया गया था। पुरुष, स्त्रियां और बच्चे आंगन में चंद्राकार में बैठे हुए गीत गा रहे थे। आधा दर्जन औरतें एक दूसरे की कमर में हाथ लपेटे बड़े लयात्मक स्वर में गीत गा रहे थे और उसके साथ ही लयताल से उनके पैर थिरक रहे थे।

''झूमर नृत्य कर रहे हैं।'' मंगला ने बताया।

''हमारे अनेक त्यौहार हैं जिनमें झूमर गाया और नाचा जाता है। टुशुपूजा और करमपूजा

हमारे अपने त्यौहार हैं किन्तु हम असमियां बीहू के साथ होली और काली पूजा भी मनाते हैं।''

''वे इस समय क्यों नाच रहे हैं।'' राजवीर ने पूछा।

''ओह। किसी की एक हफ्ते में शादी होने वाली है और उन्होंने अभी से उत्सव मनाना शुरू कर दिया है।''

सावन की झोपड़ी बस्ती के आखिरी छोर पर थी जैसी कि पहले से योजना बनी थी, मंगला थोड़ी दूर पर रुक गया जब कि प्रांजल, राजवीर और अलका उसके घर में घुसे।

सावन ने उनका स्वागत किया। उसने उन्हें बैठने के लिए मूढ़े दिए।

''हम चीते के बारे में जानना चाहते हैं जो आपका बैल उठा ले गया था।'' प्रांजल ने कहा।

सावन बेचैन सा हो उठा। उसने अपने चेहरे को ऐसा सिकोड़ा मानो वह उस घटना को याद कर रहा हो।

''ओह, उस घटना को हुए तो लगभग एक पखवाड़ा हो गया। मुझे याद है वह अंधियारी रात जब वर्षा हो रही थी। लगभग आधी रात को मैंने पिछवाड़े गौशाला में हल्की आवाज सुनी। मैं अपना चौड़े फन वाला चाकू दायें हाथ में लिए बाहर आया। जानते हो मैंने क्या देखा। एक बहुत बड़ा चीता। उसने बैल की गर्दन को मुंह में दबा रखा था और उसे घसीट कर ले जा रहा था।''

''तुम्हारे पास लालटेन तो रही होगी।'' राजवीर ने पूछा।

''नहीं। छोटी सी लालटेन, जिसका हम घर में इस्तेमाल करते हैं, इस प्रकार के मौसम में कोई काम की नहीं होती।''

''तुम्हें पक्का पता है वह चीता था।'' प्राजंल ने जानना चाहा, ''वह रायल बंगाल टाइगर भी हो सकता है।''

''नहीं वह चीता ही था। मुझे उसके शरीर पर धब्बे स्पष्ट दिखाई दिए थे।''

''फिर आपने क्या किया।''

''मैं क्या कर सकता था। सियार को तो मैं मार सकता हूं किन्तु चीतो से मैं नहीं लड़ सकता, छोटा साब, इसलिए मैं जोर जोर से आवाज देने लगा, एक टीन बजाया और बहुत हल्ला मचाया।''

"तुम्हें बैल का हाड़-मांस तो मिल गया होगा।"

"जी नहीं। मैंने उसे ढूंढने का प्रयास ही नहीं किया। मिलने से भी क्या होता। वह तो मर चुका था, खैर।"

"तुमने उसके पंजे के चिन्हों को ढूंढा था।" राजवीर ने पूछा।

"एक भी नहीं मिला। बरसात के पानी से सब धुल गए थे।"

वे लोग झोपड़ी के पीछे बनी गौशाला में गए। बच्चों ने चारों तरफ अच्छी तरह देखा।

"अजीब बात है।" राजवीर ने कहा। "मैं तो कोई जोरदार कहानी सुनना चाहता था कि आपने चीता कैसे पकड़ा किन्तु आप तो डर गए। कोई बात नहीं, धन्यवाद। नमस्ते।"

"छोटा साब।" सावन ने प्रांजल को पुकारते हुए कहा "कारखाने में जो चोरी हुई थी उसके बारे में आपके पिता ने कुछ कहा है।"

"ओह हां।" प्राजंल ने चेहरे पर कोई भाव लाए बिना कहा। "उन्हें आज सुबह पुलिस ने फोन किया था। डेका और बिरची दोनों ने चाय की चोरी करने का अपराध स्वीकार कर लिया है।"

"स्वीकार कर लिया है।" सावन ने आश्चर्य से कहा।

"हां। पुलिस ने मामले को यहीं समाप्त कर दिया है। पिता जी कल से फिर माल गोदाम का उपयोग करने लगेंगे क्योंकि चोर पकड़े जा चुके हैं। कारखाने में चाय की पेटियों का ढेर लग गया है और उन्हें माल गोदाम में भेजा जाना है।"

उन्होंने जाते जाते सावन के चेहरे पर खुशी चमकते हुए देखी जो एक कान से दूसरे कान तक फैल गई।

थोड़ी देर बाद मंगला उनसे जा मिला। "कुछ नतीजा निकला।" उसने पूछा।

"सावन निश्चित रूप से झूठ बोल रहा है।" राजवीर ने जवाब दिया। "उस रात घना अंधेरा था और बरसात हो रही थी, उसके पास कोई लालटेन नहीं थी, बरसात ने पंजे के निशान मिटा दिए थे फिर भी उसे विश्वास है कि उसने चीता देखा था। वह तो चीते के शरीर पर धब्बे देखने का भी दावा करता है।"

"हमने पिछवाड़े जा कर देखा" प्रांजल ने जोड़ा "घर के चारों ओर लगी बांस की बाड़ी बहुत पुरानी है किन्तु वह कहीं से भी नहीं टूटी है। एक भरापूरा बैल बहुत भारी भरकम जानवर

होता है और चीता भी उसको लेकर बाड़ी नहीं फांद सकता। अतः यदि चीता वहां सचमुच में गया होता तो बाड़ी कहीं से टूटी मिलती।"

"वह बैल के खो जाने पर भी खुश नजर आता था।" अलका ने बताया। "बैल बहुत कीमती होता है और बागान के मजदूर गरीब हैं"।

"बिल्कुल यही मैंने सोचा था" मंगला ने कहा। "सावन पर नजर रखने की आवश्यकता है।"

"हम भी यही योजना बना रहे हैं," प्रांजल ने कहा "मैंने उन्हें कुछ गलत सूचनाएं दे दी हैं। हम यहां आज रात फिर आएंगे और देखेंगे कि आज वह क्या करता है।"

अध्याय 9

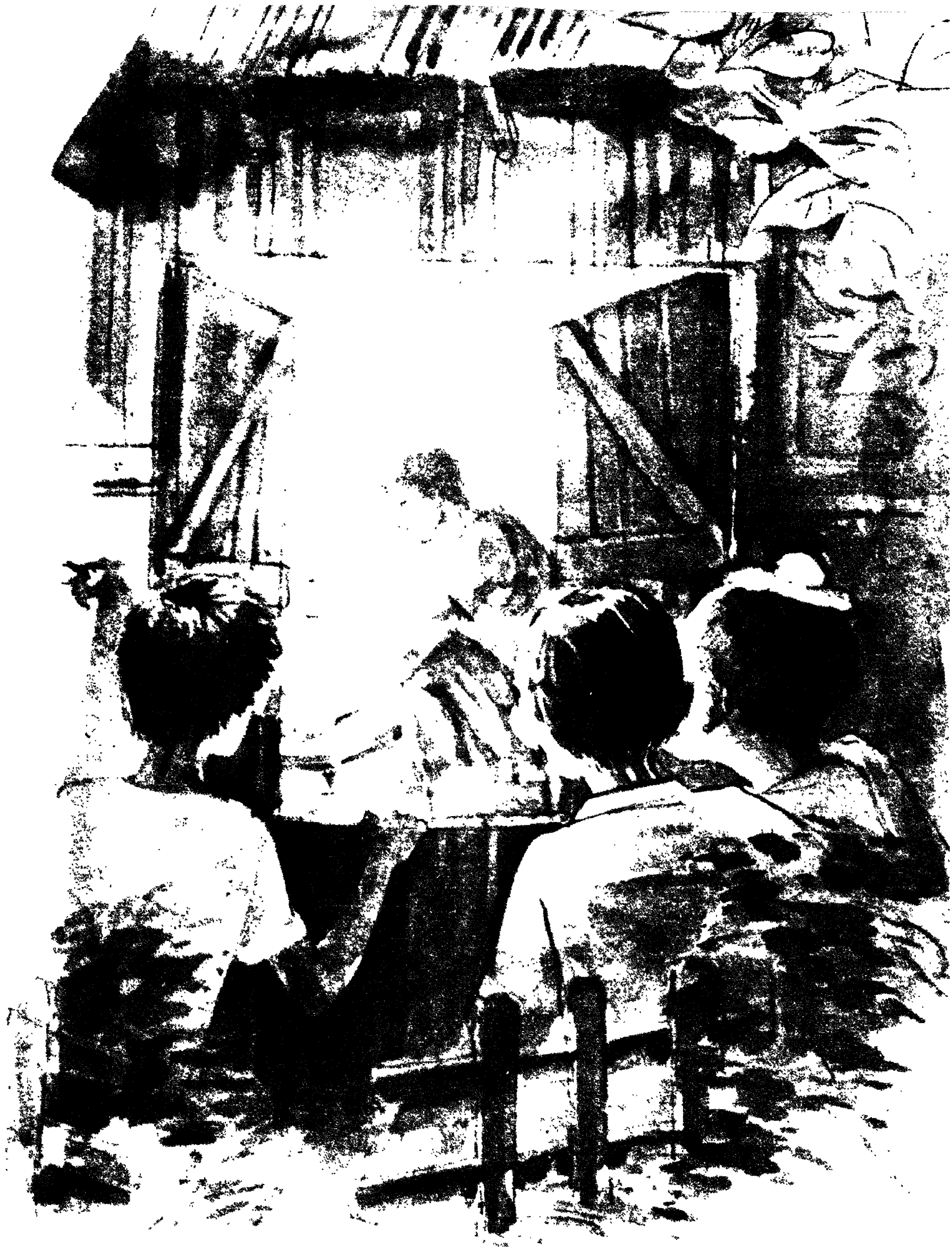
रात करीब 11 बजे प्रांजल और राजवीर अपने बिस्तरों से खिसक गए और दबे पांव सीढ़ियां उतरे। बंगले से निकल कर जैसे ही वह टूल शेड की तरफ बढ़े उनके साथ उनका प्यारा कुत्ता टीपू भी आ मिला। रात्रि में उसे खोल दिया जाता था। प्रांजल ने अपनी टार्च दो बार जला कर इशारा कर दिया और सामने एक छाया उभरी। वह मंगला था। उसने फुसफुसाकर कहा, "जल्दी आओ, समय नहीं खोना चाहिए।"

तीनों बस्ती की तरफ बढ़ने लगे। घना अंधेरा था। बादलों से आकाश काला हो गया था। कभी कभी आंधी आने का संदेश लिए दूर कहीं बिजली चमक उठती थी।

बागान के रास्ते रात्रि में लगभग एक जैसे लगते हैं। यदि उनके साथ मंगला न होता तो वे भटक गए होते। मंगला कोई गलती किए बिना उन्हें बस्ती में सावन की झोपड़ी की तरफ ले चला।

अन्य झोपड़ियां तो अंधकार में डूबी हुई थीं किन्तु सावन की झोपड़ी में उजाला दिखाई दे रहा था। दीवार के किनारे चलते हुए लड़कों ने बांस की बनी खिड़की से अंदर झांका।

सावन अंदर था और वह कहीं जाने की तैयारी में था। उसने चौड़े फल वाला अपना दाव उठाया और लैंप बुझा दिया। धीरे से बिना आवाज किए दरवाजा बंद किया और बाहर निकल गया।

लड़के और अंधेरे में खिसक गए। एक मिनट के लिए सावन रुका और आसपास की टोह लेता रहा कि उसके जाने को कोई देख तो नहीं रहा है। फिर वह तेजी से कदम बढ़ाते हुए चलने लगा।

लड़कों ने उससे कुछ दूर रह कर उसका पीछा किया।

एकाएक राजवीर का दिल बहुत जोरों से धड़कने लगा। बिना चेतावनी दिए, उनके पास एक लंबी और ऊंची आवाज में कोई जानवर चिल्लाया।

"क्या है ये।" राजवीर की आवाज में डर समाया हुआ था।

"सियार"। मंगला ने फुसफुसाकर कहा। "यदि एक सियार हुआ-हुआ बोलने लगता है तो बाकी सारे सियार भी उसके साथ कोरस गाने लगते हैं।"

प्रांजल के पेट में भी डर और उत्तेजना से एेंठन शुरू हो गई। घने अंधेरे, बासं के तनों से टकराती हुई हवा की खड़खड़, सियारों की रोमांचकारी आवाज से घबराहट फैल रही थी। उसने आश्चर्य किया कि ऐसे समय में वहां चीता क्यों नहीं है।

सावन अब पक्की सड़क पर चल रहा था जहां प्रत्येक रविवार को छोटा सा साप्ताहिक बाजार लगता था। वहां पक्के मकानों की एक छोटी सी कतार थी जिसका उपयोग दूकानदार अपने रहने के अलावा दूकान के लिए भी करते थे। सावन एक मकान के सामने रुका और उसने दरवाजा खटखटाया।

दूसरी तरफ से भी जवाब मिला फिर दरवाजा खुलने की आवाज आई और किसी ने सावन को अंदर बुला लिया। उसके अंदर जाने के बाद दरवाजा फिर बंद हो गया और सिटकनी चढ़ा दी गई।

मकान के बगल से एक सकंरी खाई सी थी। वहां एक छोटा सा गंदा नाला था जिससे तीखी गंध आ रही थी। यह नाला पड़ोस की दुकान को इस मकान से अलग करता था। लड़कों ने उसे पार किया। दुगंध से उनकी नाक फट रही थी। वे एक के पीछे एक होकर दबे पांव अधखुली खिड़की की ओर बढ़ने लगे। मंगला ने सतर्क होकर अंदर झांका और फिर राजवीर और प्रांजल को भी कमरे की झलक दिखाने के लिए खिड़की से हट गया।

एक पलंग पर पांच आदमी पालथी मारे बैठे हुए ताश खेल रहे थे। सावन एक लंबे ऊंचे कद्दावर तगड़े व्यक्ति से बात कर रहा था, वही उनका लीडर मालूम पड़ता था।

"मैदान खाली है" सावन कह रहा था। "डेका और बिरची ने अपराध स्वीकार कर लिया है। भगवान जाने उन्होंने ऐसा क्यों किया।"

"कोई भी बता सकता है" तगड़े व्यक्ति ने कहा। "पुलिस की मार के डर से उन्होंने ऐसा

किया है। न्यायालय पहुंचते ही वे अपने बयान से मुकर जाएंगे।"

मैनेजर कल से माल गोदाम का उपयोग करने की योजना बना रहा है। कारखाने में चाय का ढेर खड़ा हो गया है और उसे वहां से हटाना जरूरी हो गया है। उसे इस बात का गुमान भी नहीं है कि पुलिस ने गलत आदमियों को गिरफ़्तार किया है।"

"चाय की पत्ती किस क्वालिटी की होगी" गेंग लीडर ने पूछा।

''हमारे बागान की सबसे अच्छी चाय है। उसके बाजार में अच्छे दाम मिलेंगे।''

लीडर का चेहरा खुशी से चमक उठा ''तब तो हम कल रात को ही छापा मारेंगे।''

अन्य लोग आश्चर्य से उसकी तरफ देखने लगे। वे इसका विरोध करने के लिए उतावले थे।

''हमें अपनी किस्मत उतनी दूर तक नहीं आजमानी चाहिए'' एक ने कहा।

''इतनी जल्दी दूसरा छापा डालना जोखिम में पड़ना होगा'' दूसरे ने टिप्पणी की।

''बिल्कुल नहीं'' लीडर ने आश्वासन दिया। ''हमारा काम पक्का है। हमें उनके आश्चर्य का लाभ भी तो है। कोई भी इतनी जल्दी दूसरे छापे की आशा भी नहीं करेगा क्योंकि लोग जानते हैं कि चोर तो पकड़े जा चुके हैं। हमें तो जिस सफलता से पहला काम किया था वैसा ही यह भी करना है।''

''किन्तु पुलिस एकदम समझ जाएगी कि डेका और बिरची असली अपराधी नहीं हैं,'' सावन ने संकेत किया।

''इससे क्या होता है। उन्हें अभी या बाद में पता लगना ही है। इस दूसरे छापे से हम सबको एक बड़ी रकम भी तो मिलेगी।''

धन लिप्सा की चमक अब उनके चेहरों पर स्पष्ट दिखाई दे रही थी। लीडर को अब उन्हें मनाने में कोई कठिनाई नजर नहीं आ रही थी।

लड़के थोड़ी देर और कान लगाए रहे और फिर वहां से हट कर पक्की सड़क पर आ गए।

''मैं लीडर को पहचानता हूं,'' मंगला ने कहा ''वह इस दुकान का मालिक है। अन्य लोग अपरिचित हैं।''

''हम जितना कर सकते थे, हमने कर कर लिया'' प्रांजल ने कहा। ''अब आगे का काम पुलिस का है।''

मंगला उन्हें सुरक्षित रूप से बंगले में जाते देखता रहा फिर उसने उन्हें हाथ हिला कर विदा किया और फिर अंधेरे में खो गया।

अध्याय 10

अगली सुबह नीलकंठ पक्षियों की चहचहाट के तीखे स्वर से बड़े तड़के ही बच्चों की नींद खुल गई। वे कपड़े बदलने में अपना समय गवाएं बिना सीधे मि. बरुआ के कमरे की ओर भागे।

मि. बरुआ बच्चों के मुख से माल गोदाम में सुरंग तथा नदी में नाव पाए जाने और सावन की दुकानदार और उसके चोरों के गेंग के साथ सांठगांठ होने के बारे में बहुत गंभीर होकर बातें सुन रहे थे।

मि. बरुआ ने पुलिस को फोन किया। थोड़ी ही देर में कोतोकी उनके पास आ गया। जैसे ही बच्चों ने अपनी कहानी सुनानी शुरू की, कोतोकी ने पहले तो उन्हें झिड़क दिया किन्तु जैसे जैसे कहानी से रहस्य खुलने लगा उसका चेहरा उत्तेजना और रोमांच से लाल होने लगा।

अंततः उसे अपने पहले के रूखे व्यवहार के लिए माफी मांगनी पड़ी। ''तुम बच्चों ने बहुत बढ़िया काम किया'' उसने स्वीकार किया, ''अब हमें गेंग को पकड़ लेना चाहिए। जब वे रात को चोरी करने आएंगे हम घेरा डाल देंगे।''

मि. बरुआ बागान का नक्शा ले आए। सिपाहियों के घात लगाने के लिए प्रमुख स्थान स्पष्ट रूप से सुरंग का मुंह और नाव थे।

''हम इन स्थानों पर बड़ी संख्या में पुलिस तैनात करेंगे। वे चाय की झाड़ियों में छिप जाएंगे। मैं स्वयं माल गोदाम के अंदर से सारी कार्यवाई का निदेश करूंगा।'' कोतोकी ने कहा।

''वो पेटियां भारी हैं'' मि. बरुआ ने मत व्यक्त किया ''वहां से नदी काफी दूर है। मैं उतनी दूर तक उन पेटियों को ले जाए जाने के बारे में सोच ही नहीं सकता।''

''यह तर्क संगत है'' कोतोकी सहमत होते हुए बोला ''इसलिए उनके पास ट्रांसपोर्ट भी होगा। वह मोटर गाड़ी तो नहीं होगी किन्तु ऐसी गाड़ी अवश्य होगी जिससे आवाज नहीं होती।''

''आपके पुलिस वालों की सहायता के लिए क्या मैं अपने आदमी भी दूं'' मि. बरुआ ने पूछा।

''यह ठीक नहीं होगा'' कोतोकी ने जबाब दिया। ''रात्रि में अधिक लोग होने से मामला गड़बड़ा सकता है। मेरे पुलिस वाले प्रशिक्षित हैं और उनके पास हथियार भी होंगे। हां, मैं ध्यान रखूंगा कि वे वर्दी में न हों।''

''क्या यह आवश्यक है।'' राजवीर ने जानना चाहा, ''रात इतनी अधेरी होगी की ये कौन देख पाएगा कि वे क्या पहने हैं।''

''जो योजना मेरे दिमाग में है, उसके अनुसार उन्हें सादे कपड़ों में ही होना चाहिए। हमें यह बात नहीं भूलनी चाहिए कि नदी के दूसरे किनारे पर ट्रक खड़ा होगा और यह भी नहीं भूलना चाहिए कि इसके पहले चाय की पेटियों की चोरी हुई है। अतः अब हमें यही करना है. ......''

रात अंधेरी और निःस्तब्ध थी। हवा भी नहीं बह रही थी। आकाश में छाए बादलों ने चांद और सितारों को ढक रखा था। गहरी छाया के पीछे बैठे हथियार बंद पुलिस वाले चुपचाप संकेत का इंतजार कर रहे थे, उत्तेजना से उनके चेहरे तने हुए थे।

माल गोदाम के अंदर कोतोकी और तीन अन्य पुलिस वाले चाय की पेटियों के पीछे छिपे बैठे थे। उनके रिवाल्वर गोलियों से भरे हुए थे।

मि. बरुआ के पास राइफल थी। वह एक पेड़ की छाया के पीछे खड़े हो गए। यह आड़ उन्होंने सुरंग के प्रवेश के नजदीक ली थी। राजवीर, प्रांजल, अलका और मंगला भी मि. बरुआ के नजदीक खिसक आए। उनके दिल उत्तेजना से धड़क रहे थे, टीपू भी उनके पैरों के पास ऐसे आकर बैठ गया मानो वह एक छाया मात्र हो।

उन्होंने नमक और सीट्रोनेल्ला तेल के घोल को अपने शरीर में मल लिया था जिससे कि मच्छरों और जोंक को अपने से दूर रखा जा सके। मच्छरों का एक दल क्रोधित हो उनके सिर पर मंडरा रहा था, अन्यथा वहां बिल्कुल शांति थी।

एकाएक टीपू के शरीर में हरकत हुई और वह धीमी आवाज में गुर्राने लगा।

हर कोई सावधान हो गया और उनकी आंखें तेजी से अंधेरे को भेदने लगीं। उन्हें

चूं-चरमराहट की आवाज सुनायी पड़ने लगी और जैसे जैसे वह आवाज नजदीक आने लगी उन्हें एक बैलगाड़ी की छाया नजर आने लगी।

"सावन का बैल।" मगला ने उपहास करते हुए धीमें स्वर में कहा। "वही जिसे चीता उठा ले गया था।"

बैलगाड़ी सुरंग के मुंह के पास आकर रुक गई। चार व्यक्ति उसमें से कूद पड़े और बड़ी लापरवाही से उन्होंने बांस के ढक्कन को उठा कर अलग फेंक दिया। उनमें से तीन व्यक्ति घुटनों के बल सुरंग में घुस गए। चौथा बाहर खड़ा इंतजार करने लगा।

बैलगाड़ी में किसी ने माचिस जलाई। गाड़ीवान ने अपनी बीड़ी जलाई थी। माचिस की ज्वाला में एक भद्दा चेचक के दाग वाला चेहरा दिखाई दिया। वह सावन था।

बीस मिनट बाद चाय की पहली पेटी सुरंग के प्रवेश स्थल पर दिखाई दी। पेटी बाहर खड़े व्यक्ति ने पकड़ ली और सावन की मदद से उसे बैलगाड़ी में लाद दिया।

झाड़ियों के बीच में छिपे हुए पुलिस वालों में से एक ने धीरे से आगे बढ़ने की आवाज दी और सभी तरफ से पुलिस वाले धीरे-धीरे आगे बढ़ने लगे। उन्होंने अपनी राइफलें साध ली थीं। सावन और दूसरा व्यक्ति विस्मय से भर उठे जब उन्होंने अपने को चारों तरफ घिरा पाया। अंधेरे में हथकड़ी के क्लिक होने की आवाज सुनाई दी।

माल गोदाम में, कोतोकी और उसके आदमियों ने चोर को चाय की दूसरी पेटी उठाते समय ही दबोचना चाहा। वह गेंग लीडर था। उस आदमी में गजब की फुर्ती थी। उसने तेजी से चाय की पेटी नीचे गिरा दी और छलांग लगा कर जमीन पर लेट गया। उसका हाथ अपनी कमर में बंधे रिवाल्वर को ढूंढने के लिए आगे बढ़ा तभी कोतोकी की राइफल गूंज उठी। आदमी तड़प कर उछल गया, गोली उसके दाहिने कंधे के ठीक नीचे लगी थी।

राइफल की आवाज से सावधान होकर सुरंग में घुसे दोनों व्यक्ति तेजी से घुटनों के बल खिसकते हुए मुंह वाले छोर की ओर चले। वहां उनकी आगवानी के लिए पुलिस वाले इंतजार कर रहे थे।

बैलगाड़ी के पास पकड़े गए चारों बंदियों को माल गोदाम ले जाया गया। मि. बरुआ और बच्चे पुलिस वालों की सुरक्षा में उनके पीछे चल रहे थे।

''माल बढ़िया है, मि. बरुआ'' हंसते हुए कोतोकी ने कहा, ''नाव में इंतजार कर रहे उनके साथी किसी भी समय यहां आ सकते हैं।''

कैदियों ने रुखाई से और बिना कोई पश्चाताप किए उसकी ओर घूरा।

मि. बरुआ ने बागान के डाक्टर को घायल गेंग लीडर की चिकित्सा करने के लिए बुलवाया। गोली आर-पार निकल गई थी किन्तु किसी अंग के खास भाग का नुकसान नहीं हुआ था। जब डाक्टर मरहमपट्टी कर रहा था उसी समय पुलिस वाला नाव वाले को धकेलता हुआ माल गोदाम में पहुंचा।

''यह तो भाग ही निकला था सर'' उसने बताया। ''यदि मैं इसे नदी में से खींच कर नहीं निकालता। पानी का सांप है यह सर।''

उन्होंने जो योजना बनाई थी वह बिना किसी बाधा के बहुत जल्द कामयाब हुई। दो घंटे

का समय व्यतीत कर दिए जाने के पश्चात् जिससे कि चोरों को किसी प्रकार का संदेह न हो, पुलिस वालों से भरी एक नाव जिसमें आगे कोतोकी बैठा हुआ था और उनको जगह बताने के लिए नाव वाला और गेंग लीडर भी बैठा हुआ था, नदी के दूसरी तरफ बढ़ चली।

वहां एक ट्रक के पास खड़े तीन व्यक्ति चाय की पेटियों का इंतजार कर रहे थे। किन्तु यह क्या। नाव तो उनके लिए प्राणघातक बन गई। उसमें चाय की पेटियों के स्थान पर सादे कपड़े पहने पुलिस वाले बैठे हुए थे। तीनों ने किसी प्रकार का विरोध किए बिना पुलिस के आगे समर्पण कर दिया।

बाद में उस रात पुलिस ने गैंग लीडर द्वारा दी गई जानकारी के आधार पर शहर के बाहर बने एक माल गोदाम पर छापा मारा और वहां से चाय की पेटियां बरामद कर लीं जो पहले चोरी की गई थीं।

अगले दिन शाम होने तक गायब हो गई पेटियों का राज पूरी तरह से खुल चुका था।

जुगनु आफसेट, नवीन शाहदरा, दिल्ली-110032 द्वारा मुद्रित।

impaired children. One special teacher may be appointed for every 8 such disabled children enrolled.

Qualifications of Special Teacher:

Primary:- Secondary Education (preferably 10 + 2) with one year in education of children with a particular disability.

Secondary:- Graduate with B.Ed. (Special Education) with specialisation in a particular disability. Special teacher will get the scales of pay of teachers of corresponding category in the State/Union Territory plus a special pay of Rs.150/- in urban areas and Rs. 200/- in rural areas.

Resource Room:

A resource room having all the essential equipment, learning aids and materials may be provided for a cluster of schools implementing the scheme. The average cost of such equipment is Rs.30,000/-. A new room may be built for resource room where no such accommodation is available for modifying architectural facilities for easier access of disabled children to a school having at least ten such children.

Provision for Education of the Disabled:

Special Schools:-

Particularly for the severely handicapped children special schools were established. Usually one school provided education for children of a single disability. This enabled the school to provide special equipment necessary for children of that disability and also provide specially trained staff specialising in that disability. Most of these schools are residential and take care of the children throughout the day. These schools provide special services needed by these children and provide a sheltered environment for them. The teacher-pupil ratio is high about 1:5. These schools are expensive because of the special equipment, better trained special staff and high teacher-pupil ratio. The provision of hostel also increases cost.

Because of the high cost, it will not be possible to provide such special schools for all disabled children. (who are estimated to be about 3 to 4 percent of the

total population). Further since these schools provide a highly protected environment, these children feel difficulty in adjusting with the outer environment after they leave school. While these special schools are essentially required for the severely disabled, they are not so essential for the moderately and mildly disabled children who can be educated in ordinary schools provided some special services can be provided for them in these schools.

Special Class in General Schools:

Another way of providing education for disabled children is through special class in general school. In such schools although the disabled children are physically in the same school as the normal children, they receive education separately in special classes according to their disability where special teachers trained in that disability teach them. Equipment needed for them are also provided in these special classes.

In these schools while disabled children are taught separately in special classes, they are integrated with other children in extra-curricular activities to the extent possible. Where hostels are provided, they are allowed to live in the same hostel as normal children. This enables these children to learn to adjust to the environment of the normal society. The normal children also learn to accept the disabled children and help them wherever possible.

In such schools, mildly disabled children can also be put in general classes with other children after they are given some preparation in special classes. They also get help from special teachers as and when necessary.

The cost of education for disabled children in these schools is almost the same as in special schools. The only advantage is that the disabled children are better helped to integrate with society.

Rational for Integrated Education:

It is estimated that there are more than 12 million children in the elementary school age who are disabled. Disabled children constitute generally 3 to 4 % of the population. This excludes children with learning disability who may constitute about 1%, Educational provision should be made for all these children. At present there are a few special schools covering a very small number of children. Special Schools are very costly and it would not be possible to provide special schools

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for all disabled children.

Fortunately it is found that except severely handicapped children, all other disabled children can be educated in common schools provided certain provisions are made for them in these schools. The expenditure in making these special provisions for the disabled in common schools is much less than the expenditure in establishing special schools.

Further, education in common schools is preferable to education in special schools, as in the former the disabled children learn to adjust with normal children. This helps them in their integration with society and in that rehabilitation. The normal children also learn to adjust with disabled children. Thus they accept the disabled in the later social life. The children, disabled and normal, learn to help each other. The National Policy on Education therefore envisages that "Wherever it is feasible, the education of children with motor handicaps and other mild handicaps will be common with that of others."

Conditions for success of integration:

Although integrated education of the disabled in common schools is desirable, it will not be effective unless certain special provisions are made. The following conditions are necessary for success of integrated education:

1. The disabled children should be identified area wise. For this, house to house survey is needed. After identification, the nature and extent of their disability should be assessed by a qualified technical team.
2. Based on the assessment, the children are placed in common schools or special schools. Those placed in special schools are again integrated as early as possible after they acquire communication skills.
3. Schools selected for integrated education of the disabled should be provided with one special teacher for every eight disabled children. This teacher should be well trained in the education of disabled children. He should provide training in communication skills to the disabled children and monitor and help in their progress.
4. All teachers of the School should be given some Orientation training in the education of the disabled.

5. The School should be provided with special equipment required for the education of the disabled.

6. Necessary architectural modification of the School building should be made for removing barriers in movement of the disabled.

7. Community awareness programme should be made so that the community understands the need of the integrated education.

8. Parents are given training in handling the disabled at home.

Project Integrated Education for the Disabled (PIED):

The PIED has been designed to strengthen implementation of the centrally sponsored scheme of Integrated Education for Disabled Children (IEDC). It is UNICEF assisted as per Govt. of India - UNICEF. Master Plan of Operations.

Special Features:

1. It is confined to one selected block in each of five states in 1987-88 and extended to four additional States /Union Territories in 1988-89 implementing IEDC.

2. Composite area approach has been adopted for planning educational services for the disabled in common with others.

3. A Project team comprising a project officer, two trained graduate special teachers and a statistical assistant will be formed and located at Block Education Offices. Two motor cycles will be provided.

4. The Project Area Resource Centre will have some aids and equipment from IEDC. The supplies will be augmented where considered necessary.

5. State level resource centre will be strengthened by augmenting equipment, supply of training material and training of personnel.

6. Thespecial Education Unit of NCERT will be responsible for all aspects of Project implementation and management. It will be developed as the central Resource Centre (PIED).

7. The SCERT will be directly responsible for Project planning, implementation, monitoring and evaluation at the State Level.

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8. A Project Area Centre will be established in selected project areas and located at a primary school. A teacher with training in special education will be in charge of the Centre. The Centre will have Instructional Material Bank (IMB) to meet the special education needs of disabled children.

9. All UNICEF funds for the Project will be channelised through NCERT. The UNICEF will meet the following costs:-

- salary of one project officer and two trained graduate special teachers for each of the Blocks selected for the Project.
- two motor cycles for each project team including running costs.
- surveys for identification, training and orientation of Project teams.
- providing equipment on a selective basis.
- printing of learning, teaching and training materials.
- participating and helping in Project designing, planning, implementation, monitoring and evaluation at national and State levels.

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█████ : Curriculum and Teaching -Principles & Practice

Dr. R. C. Das.

█████ : PRINCIPLES OF CURRICULUM

By 'Curriculum', we mean the sum total of learning experiences given/planned to be given to the learners. Courses of Studies refer only to the context of knowledge/information to be imparted to the learners. The curriculum is more than the courses of studies; it includes the objectives of teaching in terms of expected outcomes of education, the methods of transaction of teaching-learning process, and the evaluation of learning. The evaluation should indicate whether the expected outcomes have been achieved. In planning Curriculum, the objectives, the content, the methods of teaching and evaluation - all have to be specified in detail. Curriculum planning is based on certain principles; some of the important ones are:

- Relevance to environment
- Relevance to Child's need
- Relevance to subject discipline
- Flexibility.

We shall consider these principles in relation to planning the curriculum for the disabled children.

1. Relevance to Environment:

The Curriculum should be relevant to the environment. This means that the Curriculum should enable the child to deal effectively with his environment. The Child's environment not only includes the natural and physical environment, but also the social, political and educational environment.

The natural and physical environment includes the plants and animals, as well as houses, vehicles, instruments and other objects used in the child's environment. The child should understand his role in relation to these aspects of his environment and deal effectively with them.

The social environment includes the home and members of the family, the school including its personnel, the community and its people. The child should understand his duties and responsibilities in relation to all members of his social environment. He should know what help he can expect from them and what help he can give to them.

The political environment includes the government and how it functions at different levels - local, state and federal. It includes the processes of election, administration and Justice. The child should know his rights and privileges as a citizen and how he can exercise them and at the same time his responsibilities towards the government. He should particularly know what provisions there are for the welfare of the disabled.

The educational environment includes the knowledge and its development in the world and how it affects our daily lives. It also includes the provisions for education and information, both formal and informal including the role of the press, the radio and TV.

2. Relevance to Child's needs:

The Curriculum should be relevant to the needs of the child. The needs of the child may be classified as physical, intellectual, emotional - social and vocational.

The Curriculum should take into account the physical growth and development of the child. For this purpose it should provide appropriate health education as well as physical education. While doing so it should consider the age and ability of the child. In case of the disabled child, the child should be given instructions to take care of its disability while at the same time taking part in such physical activities which he can do with or without mechanical aids/appliances. While some activities can be common for the disabled and normal children, other activities/games can be organised for special groups of disabled children. Special physical and medical care should however be provided to the disabled so that they can perform all activities without much difficulty. Architectural barriers should be removed for movement of orthopedically handicapped. Glasses and hearing aids given to the partially sighted and hard of hearing.

Except mentally retarded children, other disabled children are intellectually as good as normal children. So their intellectual needs are same as those of normal children. They will have the same curiosity to know all about their environment and to find solutions to problems that they face. So the content of the curriculum for these children need not be different for the disabled from those for normal children.

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However some supplementary instructional materials may be prepared for each category of the disabled. In case of the educable mentally retarded, their intellectual level is same as those of children younger to them by 2 or 3 years; so they should be placed in a class with children younger to them by 2 or 3 years. They should be taught more slowly, with more concrete aids, and with more repetition of same information. They should be continuously encouraged to learn and never scolded.

Every child has emotional needs. Every child, more so the disabled child, needs to be loved, needs company, needs praise and needs feeling of security. The curriculum and the school environment should provide for these emotional needs. The child's development is hampered if he/she feels unloved & unwanted, considered inferior to others and feels threatened by his/her peers or teachers. The child has social needs. So the Curriculum should provide for group activities by children group activities in which children and adults take part. In case of disabled children, theschool should specially arrange for their social activities. The school should also help parents in taking care of their life at home.

The children have also vocational needs. When they complete school education, they should have some vocational skills so that they would not be dependent on others. Apart from intellectual skills of reading, writing, and arithmetic, the children should also be given somemanipulative skills which they can do. If needed, the disabled child can be given more intensive training in some manipulative skill and vocationally employ.

3. <u>Relevance to subject discipline</u>:

In planning curriculum, first the objectives of education are specified. Both immediate objectives and long term objectives are determined and these are so chosen and stated that they are observable and measurable. They are usually stated in terms of knowledge and understanding, skills and abilities that the student should acquire and changes in his personality, attitudes, appreciations, etc. that are to be effected. The content of the curriculum is chosen so as to achieve these objectives. The content is generally organised in the form of subjects of study such as Language, Mathematics, Social Studies, Science, etc.

Since the Curriculum is developed around some subjects

of study, whiledealing with each subject, it should be relevant to the subject discipline. Each subject of study has its own discipline which is expressed in its logical sequence, systematic method in its processes, its own rules and applications in daily life. In developing the curriculum, all those aspects of the subjects should be taken into consideration.

In teaching a subject, the logical sequence in which the constituent units of the subject should be developed should be noted. If this sequence is notfollowed, the subject loses its continuity and appears disjointed. The student will not see the relationships between the different parts of the subject unless they are dealt logically. Further if the logical sequence is not followed, those units, which are taught without teaching the earlier units on which they are based, will not be understood by the students, for example: if you teach multiplication before teaching addition, the student will not understand, for multiplication is logically based on addition.

A subject has its own systematic method. This method should be explained and followed. For example, addition of numbers is done in a particular method, multiplication has its own method. In language an essay is written in one way, a letter to a friend in a different way. In the curriculum, all these methods should be learnt in relation to the subject.

A subject has its own rules. In language, the rules of grammar are to be learnt and followed. In Mathematics, various formula have to be learnt and used in solving problems. Rules express the relationships between different concepts and ideas in the subject.

A subject has its own applications in life. In learning the subject the student should learn how he can use what he has learnt in his daily life. Language he uses in communication of his thoughts, mathematics in shopping, measuring and solving problems involving numbers, science he uses for healthy living as well as in leading a comfortable life, social studies helps in understanding his role in society.

4. Flexibility:

Flexibility of the curriculum means the degree to which the curriculum can be varied to suit to particular conditions. If everything in the curriculum is fixed and common to all

pupils for all places over a period of years, the curriculum is not at all flexible. Flexibility in the curriculum gives the teacher the freedom to make variations in the content, method of teaching and evaluation procedure to make it more suitable to particular conditions.

A flexible curriculum gives only broad guidelines regarding objectives, content, method of teaching and evaluation. Within these guidelines, it gives much freedom to the teacher develop the details of the curriculum. Flexibility can be considered in relation to 'time', place, pupils and school facilities.

A flexible curriculum should cater to individual differences among pupils. For this purpose often the curriculum is made of two parts a core curriculum common to all pupils and an optional curriculum which the pupil chooses depending on his own interest. To provide for flexibility over space the N.P.E. prescribes a national curriculum consisting of a core curriculum which iscommon all over the country and another part which varies from place to place. In this way the curriculum can preserve the national unity and culture and at the same time, the local and state culture can be given its due place in the curriculum. Flexibility should also allow differences in the physical and natural environment to be reflected in the curriculum.

Flexibility should not only allow for differences in interests of pupils but also for their abilities — both physical and mental. Although content may be same for visually, auditory and orthopadic disabled children as for normal children, the methods of teaching will vary. Also supplementary instructional materials which differ from one disability to another should be prepared and used. The mentally retarded has to be given a much lower level of curriculum. Evaluation should take into consideration the nature of disability. For visually disabled children, the curriculum should provide more audio experiences using audiotapes and cassettes. Also tactile experiences are given. For auditory disabled (hearing impaired) children, more visual experiences through models, pictures, etc. should be provided. While providing practical activities and extra-curricular activities, the disability of the children should be considered and such activities as the children can do should be assigned/provided to them.

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Flexibility should take into account differences in physical facilities of the school. A school can implement a curriculum for which it has necessary facilities. So the flexibility in curriculum should be provided so that the school can make adjustment of the curriculum to suit its facilities.

A curriculum should also change with time. Flexibility should be provided so that the curriculum is re-examined every year and desired changes are brought about to make the curriculum suitable to the changing conditions of the society/country. The curriculum should also present upto date knowledge about places, people and things mentioned in the curriculum.

Curriculum Adjustment & Adaptation to Special Needs.

Dr. R. C. Das.

The curriculum in the school is generally prepared keeping the normal child in view. The principle of flexibility of the curriculum should allow suitable modifications in the curriculum to suit to special needs. We have also seen that children with sight, hearing or orthopedic disability have the same level of intelligence as normal children and can be given the same level of curriculum. Children with learning disability can also follow the same curriculum provided remedial action is taken to overcome their learning disability. Educable mentally retarded children however are less advanced mentally and should be placed in a class two/three years lower than their age. However, some curricular adaptation have to be made to the curriculum for each of the kinds of children with disablement. The nature of adaptation depends on the nature and level of disability. The following principles should be considered for adapting the curriculum for the disabled studying in regular schools.

- the adaptation should not change the original concept of the curriculum.
- compensatory activities should be planned in such a way that the child gets a wholistic picture of the concept taught in regular classes.
- modification in the instructional material should not disturb the majority of normal children studying in IED classes.

A possible strategy of adjustments in the instructional material can be:

- outlining the proposed teaching and learning points
- analysing the needs and type of adjustments at various levels,
- planning the adaptation in instructional material and methodology,
- preparation of supportive materials, and
- planning of group activities in the general classrooms.

Adjustment of instructional material and methodology can be made in the following ways:-

(1) Without change in regular teaching,

(2) With supportive aids, and

(3) With resource teaching.

(1) Adjustment without change in regular teaching:

Here the teacher only makes adjustments in the physical environment, such as:-

Hard of hearing children are asked to sit in the front benches,

Partially sighted are given large print materials and magnifying glasses,

Braille script is given to the blind child,

Adjustable furniture provided for orthopaedically handicapped,

Correction of specific learning problems of learning disabled children is done through participation of normal children.

(2) Adjustment with supportive aids:

Here the teacher provides appropriate supportive aids to each kind of disabled children to teach the same concepts as taught to normal children.

Recorded tapes can be used to correct speech problems of hearing impaired. The sounds should be recorded in minimum phonetic pairs. In addition the teacher can give visual materials to match the given sound. Thus the teacher can help the hard of hearing in learning the alphabet and the normal children in learning correct pronunciation.

The blind child can be given tactile material to match the sound.

The orthopaedically handicapped do not require supportive aids for learning the concepts taught to normal children. The child with upper limb impairment is given prosthetic aids and physiotherapy for adaptation of limbs. Thick pencils or pens are provided for easy holding.

The educable mentally retarded is given additional work booksfor repetitive exercises.

(3) Adaptation with resource teaching:

The teacher should identify the learning difficulty of the disabled subject wise and suggested remedial exercises, but these exercises should be organized by the resource teacher outside the class, by a special arrangement of thetime table within the normal school hours.

For example, if the hearing impaired is unable to learn speaking the sounds "Oh", "th", "dh" etc., the resource teacher can arrange corrective exercises to teach a particular sound. If a blind child is a poor braille reader due to faulty movements of the finger tips, the regular teacher should take the help of the resource teacher for correcting his problem.

Guidelines for adaptation in x instructional material and methodology disability wise is given below:

Hearing Impaired:

Due to improper hearing inputs or lack of them, such children have more deficits in acquisition and retention of language. They have problemsin learning correct articulation and in acquiring speech and language skills at the initial stages. But if they are given adequate training in speech correction, their speech and language acquisition and retention is like normal.

For teaching the hearing impaired in a regular class, the teacher needs to adapt the curriculum on the basis of the following points.

- More visual cues should be provided to compensate for auditory deficits. Writing the letter, showing how the correct sound of pronunciation is made, making the child touch the vocal chords while pronouncing, and practice is minimum phonetic pairs are some of the methods used for teaching correct pronounciation and spelling. Additional work book can be given to them for writing and learning,spelling and pronunciation.
- The hearing impaired require a wholistic perception for understanding any concept. A list of all features and objects given in a particular lesson should be given to them earlier, so that they can see and observe the differences in the objects/concepts to be taught in IED class.

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- Substitute the activity which does not provide same learning experience. If the child can not articulate a word correctly but knows its meaning and can use it in written sentence correctly, do not emphasize on correct articulation.
- Wholistic method should be used to teach language skills.
- Language teaching should be related to child's experiences. New words and phrases should be taught by associating them with concrete objects and situations.
- Emotional concepts and difficult phrases should be taught using action oriented situation.
- Abstract concepts are taught using visual aids, role playing and dramatization.
- Short question - answer method should be used for oral participation.
- Poems should be taught for rhythm. Usage of similies confuses them.
- Supporting exercises are given for learning correct reading and writing.

Visually Impaired:

Visual impairment restricts a child's learning environment to auditory and other senses. For learning about size, colour, weight and emotional expressions, the blind may face more difficulty than the partially sighted. The teacher has to provide learning experiences in smaller units. For example, the essential attributes of a 'beautiful' flower' can be for this child, the pleasant smell of the flower, the freshness of the flower and the thickness of the flower.

The guidelines in adapting the instructional material for visually impaired children in IED are :-

- More auditory and tactile aids should be given to compensate for visual deficits.
- More verbal cues should be provided for explaining concepts.
- Three dimensional aids should be provided to children to provide a whole experience of the concept.

- The child should be allowed to manipulate the learning aids.
- Essential attributes of the concepts should be determined in the light ofthechild's limitation and taught one by one.
- Compensatory aids like care for mobility, braille slate and stylus for learning to read and write, abacus to learn numerieal concepts and brailler for taking dictation in class should be provided.
- A multisensory approach should be used to provide complete learning experience to the child.
- The adaptation of the instructional material should be in terms of verbal instruction.
- The use of additional and supportive material should not disturb other children in the class.
- The teacher should avoid the use of instructions like 'see', 'look', etc. which require the use of vision.
- The teacher should ask the resource teacher to prepare additional and supportive material in braille and large print before taking the lesson. Normal children can also help in preparing tactile aids in IED settings.

Mentally Retarded:

- Mentally retarded children require plenty of rest between instruction as they have short attention and memory spans. School time table should be adjusted so that periods of rest and play are provided in between.
- The learning activities should be organized through games, physical activities and music which form a permanent impression on their minds.
- The teachers should follow a strict development sequence for teaching basic skills. Sufficient practice should be given to them in learning the basic skills.
- Adaptation of instructional material and methodology should be in terms of developing cognitive abilities and muscular coordination.

- Activities requiring coordination of hand and eye movements.
- Activities which help in memory skills,
- Activities in developing sound discrimination.
- Activities which promote linguistic competencies, completing sentences, reading, writing skills, devloping perceptual ability.
- Encourage children to choose learning activity of their interest.
- Provide necessary aids and supportive materials to learn the concept adequately.
- Environment of the class should be conducive to allow development of their potential to the maximum degree.
- Help them in developing socially accepted behaviours.

Orthopaedically handicapped:

These children require prosthetic aids and appliances and physiotherapy. They can be taught in the general classroom. They require adaptation in physical environment.

- Arrange seating in such a way that their movement does not disturb the class.
- Children with lower limb problems need crutches, wheel chairs, braces, hand rails, etc.
- Children with upper limb problems need to have their booksfixed on lap boards, require page-turner, thick pens, pen holders for reading and writing purposes.
- As the child grows, the artificial limb or brace used need to changed. (They rarely fit for more than a year). Recommend help of a prosthesist.
- The height of furniture used should be adjusted so that it does not interfere with the function of prosthesis used.
- Postural habits should be observed so that children do not develop wrong postures.
- Children with health problem like athritis, cardiac diseases should not be given prolonged activities like writing.

- Normal children should be told not to tease the children or hide their prosthestic aids.
- Adapt physical exercises to provide proper muscular exercises.

Learning Disabled:

These children make some kind of mistakes repeatedly either in writing, reading or arithmetic.

- Give exercises to the child in identifying the letter or number, which he has difficulty in writing, speaking or recognizing.
- Give exercises which provide feed back of the same letter in different shapes, sizes and colours.
- Letters or words which resemble each other, either visually or auditorily should not be taught together.
- Sensory experience should be provided to copy letters correctly and verbalize differences. For example on, no; saw and was.
- Ensure that the child is continually busy and interested in the task during teaching session.
- Give easier exercises first which the child can master.
- Learning tasks should be divided into small groups so that the child feels he has mastered the task.
- Give the child a paragraph in which he has to underline a particular letter or word as quickly as possible.
- Encourage the child to perceive the words as a whole rather than through identification of individual letters.
- For a child having difficulty in memorising times, tables help him to memorise by explaining number relationship clearly.
- For improving reading and writing skills, give dictation of words of graded difficulty and exercises in single words, simple sentences and gaps in paragraphs to fill.

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STATEGIES INVOLVED IN THE EFFECTIVE PLANNING AND UTILIZATION OF LOW COST TEACHING AIDS

S.P.Mishra
Lecturer in Educational Technology,
R.C.E., Bhubaneswar

Introduction:

Education is being unfairly and unevenly made available to the entire population, particularly the children with special needs. Education involves the transfer of communication of information/ideas/knowledge/ideas from one point (the source) to another (the receiver). Until now this process was largely dependent on the spoken words or verbal method (through the medium of the teacher). But today the sphere of education has gone through a revolutionary period of change. The present trend of education is towards the'seeing and doing' type of schools, where concrete experiences are the basis of all effective learning. In these schools, the teacher with improved tools of teaching has become a better teacher, more effective active and efficient. Utilization of such resources has become all the more important, particularly in view of information explosion these days.

EDUCATIONAL SCENARIO OF RURAL-CHALLENGES & PROMISES

Out of 6 lakhs primary schools in the country, 75% of the schools are situated in the villages which covers 80% of the school going population of rural areas. These rural schools suffers badly for want of adequate funds to procure the equipments and teaching aids available commercially. Low cost teaching aids with simple materials available in the immediate school

environment, by involving the rural artisans, if need be, are relevant to make learning effective. In a developing country like India where rich art and craft tradition co-exist along with enormous diversity of language and culture, it becomes imperative to view this trend with restraint.

The funds, the management and co-ordination capabilities in education are expected to rise sharply in near future. The rural elementary and secondary schools in India suffer heavily for want of adequate funds to purchase teaching aids which could supplement the classroom teaching done primarily through books and blackboards. With the advent of Educational Technology, vast array of instructional materials have become available to supplement the curriculum. The teaching methods of technique can be improved with the help of these materials. The various kits already supplied to the schools are quite often inadequate or not utilised properly due to the reasons such as

(a) Lack of trained teachers
(b) Breakage or loss of some items
(c) Fear of loosing or mishandling them
(d) Lack of proper attitude and motivation
(e) Irrelevant to support the curricular needs of the children.

On the other hand, one finds that some urban schools well-equipped with aids, purchased more often to justify the budget, seldom use them in any systematic or regular manner. In cities where educational television was introduced, one invariably finds the TV set not working and the teacher/administration/broadcasting

agency not being able to coordinate its regular use in the class. There may be several reasons for the poor utilisation of this medium, the potentialities of which have been emphasised time and again. The films and slides are often too expensive to purchase in the Indian context.

One significant factor, though not the only one, which seems to underline all such failures almost globally to use simple or sophisticated aids is related to the involvement of teachers in the making of aid. His own interest in teaching must give rise to the necessary of aids, some of which he must make himself. If he is regularly involved in preparing his own aids, charts or models as it may be his appreciation for sophisticated aids is also likely to grow. If his involvement is not there in it, he may not use or encourage the utilisation. Without appreciation and participation he feels threatened by sophisticated aids such as TV and films.

WHAT IS LOW COST TEACHING AIDS

In the context of various media being used in the educational institutes, low cost teaching material is considered as some thing (other than book and Black-board) which is related to the local environment. The environment may consist of the natural surroundings of trees, plants, river, pond or sea. There may be in the environment of near it, a market which has small or medium size industry. The market may provide very inexpensive material. The industry may provide some of the waste products. The community living in the environment may have a history and culture of its own, local art, craft, technology, trade and commerce etc.

Some of the examples of material freely available in the environment may consist of bamboo, empty match boxes, card-board boxes, crates, used bicycle spoke, used bulb,, shells, seeds, clay, thorns, used cigarette boxes, ball-bearing.etc. The low cost material accessible in the environment may consist of valve tube, torch bulb, wire, plastic tube, match stick, rubber band, nails, protractor, etc.

The concept of low cost aids, therefore, arises out of use of local resources and local technology, involving the local persons. In the above context, the low cost appropriate material in India includes charts, models and other graphic aids which could be prepared easily with the locally available materials to make learning effective, comprehensive and fascinating. Teaching aids have to be related to the teaching of concepts, sub-concepts and processes which are involved in the preparation of aids. It is, therefore, very relevant and important to see as to what particular teaching aid would be more appropriate for a given concept.

HOW TO PREPARE:

How does the teacher make such teaching aids which do not cost or cost very little ? Where does the material come from ? Has the teacher to prepare such aids all by himself or others are to be also involved ? Can the rural artisans become a part of such an educational attempt ? Above all, can the culture of educational media sadly lacking in the country begin, if indeed it can grow from the grass-root level ? If it can, where to begin, how to involve the teachers and the community in the process, are there examples of work done on these

lines in small or big measures, what are their methods towards development of ideas and the wider dissemination ? These and many other questions have been shared with some groups and institutions in this module.

(a) This paper aims at providing the teachers an opportunity to develop and study the techniques and suggested material that may be used by him in his own environment rather than depending upon the ready-made aids to which he may not have any access.

(b) This paper outlines on some selected teaching aids which provides concise textual information with regard to the availability of material in the environment, selection of concepts, the media to be selected for preparing the teaching aids with available materials and involvement of local community in the preparation process.

(c) The module also describes the various materials available in the environment for the preparation of simple aids (either with low cost or zero cost) for better comprehension of difficult concepts at primary level.

(d) It provides an opportunity in understanding the values of the low cost and zero cost teaching aids in the present educational scenario of the country.

(e) It provides certain . ideas and information about the ways of obtaining help from local artisans, craftsman and talented persons to be associated with the teachers and students in making few ideal teaching aids.

(f) Keeping the real constraints in view the module has been designed for the teachers of rural primary schools to prepare few listed teaching aids by involving few creative students and local artisans depending upon the availability of the suggested materials.

SCOPE & PURPOSE OF USING LOW COST TEACHING AIDS

1) These teaching aids privide excellent opportunities to make but use of the child's sense of sight and learning for gaining useful learning experiences.

2) Provides a good substitute for the direct experience.

3) Helps in the clarity of difficult subject matter.

4) Works a good motivating force.

5) Develops desired interests and attention in learning.

6) Helps the students in memorization by providing adequate sensori experience or impressions.

7) Helps in adequate reinforcement to the learners.

8) Helps in positive transfer of learning

9) Proves useful in making use of maxims of teaching.

10) Helps in reducing evil effects of verbalism.

11) Helps in meeting the varying requirements of learners emerged on account of individual differences

12) Helps in development of mental faculties of the children.

13) Helps in developing inquiry habit and scientific attitude among the children.

14) Proves helpful in building proper educational environment and maintaining appropriate classroom interaction.

15) Proves helpful in meeting inadequacies and shortage of resources in the field of education.

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MICRO-COMPUTER AND CHILDREN WITH SPECIAL EDUCATIONAL NEED

Dr.(Ms) Tapati Dutta
Lecturer in Education
R.C.E., Bhubaneswar.

Advancement of science and technology not only changed the way of life but also changed the teaching strategies for normal children as well as the children with special needs. It is worth mentioning here to make clear - some of the important terms often used while considering the use of the computer in the classroom. Computer Based Learning (CBL) is gaining more and more popularity. CBL can be divided into two main areas: Computer Assisted Learning (CAL) and Computer Managed Learning (CML). According to Hooper and Toye (1975) teaching people about computer (CAL) and teaching people with computer (CML). But it is evident that teaching people with computers encompasses teaching people about computers. Thus this distinction is superfluous. However, Maddison (1982) emphasised, the computer should only be introduced as a teaching aid, if it is likely to improve the quality of teaching.

CML: or TEACHING WITH COMPUTER

What exactly can a Micro-Computer do ?

1 Supply Individualised one-to-one approach: It attends to each and every individual. The individual can proceed according to his own pace. This creates motivation

for learning and the child does not feel that he is inferior to other children. Thus, it avoids inferiority complex and enhances self-confidence which results in developing positive self-concept.

2. Act as an Electronic Blackboard: The teacher can retr the graphs and figures just pressing a key. He need n have to waste time in drawing them on the blackboard again and again. Once the programme is prepared that be used by any body, any number of times.

3. Animate and Illustrate Concepts: The concepts can be illustrated with the help of concrete examples. Any object, or situation can be created on the screen wit attractive colours and music which attracts the atte of the children. The examples can be repeated again a again till the child understands and retain them.

4. Reinforce Basic skills, i.e. provide opportunities fo over learning: The computer programmes gives the feed immediately. The reinforcement follows each and every correct response. This is very important for effecti learning.

5. Computer is a good device for drill and practice: Dr and practice is carried on very effectively with stim variation without wasting time. Every thing can be planned in advance. The tasks can sequenced from simp to complex with proper planning.

Simulate: Many abstract concepts can be illustrated in simulated situation which may be difficult to explain verbally e.g. Rainfall.

Offer Problem Solving Activities: Many problem solving tasks can be presented through games and children can solve them by interacting with the computer without the help of a teacher.

Aid Communication: The word processors are very useful for those who cannot write clearly, especially the spastic children. They can easily type and print the materials and thus have a clear and attractive documents which would not have been possible otherwise. Those having speech problems can also communicate through computers.

Planning Aid: Lessons can be planned and prepared in advance and preserved in discs. The same lesson can be used by many teachers and the students as and when required.

Offer access to normal curriculum: Computer programming itself is based on task analysis. The curriculum for the normal children can be task analysed and simplified for the use of disabled children. The children with special needs will be able to overcome the gap by drill, practice and overlearning the prescribed lesson. Thus the disabled child can have easy access to the curriculum meant for normal children.

CAL: TEACHING ABOUT COMPUTER

Micro-computer can be an excellent teaching aid, if it is utilised skillfully and intelligently by the teacher. teacher has to take care about the following matters.

(1) Selection of an appropriate programme or soft ware:
The teachers of special need children have to ask the following questions, before selecting soft ware.

A. Questions related to educational objectives:

- What are the educational aims and objectives of the program and are they clearly stated ?
- For what other teaching objectives might this program be useful ?
- For what age range is the program most suitable ?
- Are the identified objectives relevant and worthwhile for the children we are seeking to teach ?
- Could those objectives by attained just as well with the computer, using traditional techniques and mater
- How is attainment of the objectives to be assessed ?

B. Questions related to teaching methods.

- Is the teaching method primarily instructional (involving drill and practice or conveying structur information) or is it investigatory(proceeding by discovery with the child uncovering patterns, princ and problem-solving strategies).

Is the program best used for class, group or individual work ?

How frequently is teacher intervention required ?

Questions related to program design:

Is the program accompanied by adequate documentation ?

How flexible is the program ? Does it offer a range of options to cater for a wide range of age and ability levels ?

Will the program carry the children forward at the right pace, pushing them along but without stress.

Questions related to pupil-machine interaction:

Is the program stimulating and exciting and does it adequately reward success ?

Are all messages in short, simple sentences, using everyday words that are likely to be familiar to the children ?

Are the required pupil responses simple ?

Is the program easy to control ?

Does the program have a properly thought-out correction and retrieval procedure ?

Does the program provide for the use of a concept keyboard, light pen or other simplified input device ?

Questions related to screen display:

Is the display clear and easy to read ?

2. Add-ON-DEVICES

There are also several add-on-devices which can provi[de] easy access to the micro-computer for children with special nee[ds]

A. POP-IT-KEY BOARD

It has only nine keys and it is extremely easy to use. It is light and can be held in hand. The unique keyboard desig[n] perfect for infants and those with special needs.

B. CONCEPT AND OVERLAY KEYBOARD

In place of normal keys it has large pressure sensitive areas. The keyboard is provided with a close fitting and clear[ly] marked overlay, pressure on any marked area will produce an in[put] to the computer. The overlays can be designed with letters, wor[ds] or pictures. It is useful for MR, Visually impaired or hearing impaired children.

C. KEY GUARDS

A board which overlays the normal qwerty keyboard and [gives] access to the keys through holes. Thus enables persons who have poor finger control or who use other aids like head pointer. It [is] very useful for physically handicapped.

D. EXPANDED KEY BOARD

A large tough keyboard, widely spaced keys use for physically handicapped.

E. MICROWRITER

A hand-held keyboard with six keys. Using different com[bi]nations it is possible to type all the normal letters. This is [use]ful for partially sighted and orthopaedically handicapped child[ren].

F. QUINKEY

It is completely different form of keyboard which is plugged into the micro like concept keyboard. It is a single hand device having only Five keys (one for each finger) and a lower command key. Combinations of the keys enables the letters, numbers and punctuation of the qwerty keyboard to be selected.

G. JOYSTICKS

A lever like gearstick which sends various signals to the computer depending on which way it is moved.

H. PALAN TYPE

The system needs a trained 'palan type' operator to type the spoken words, in a machine short hand, on to a special keyboard; the computer translates this into phonetic english and displays on the screen. Seeing the spoken words on the screen helps the deaf persons to attend phone call, attend meetings, etc.

I. ALPHAVISION

It is useful for partially sighted persons. It is able to enlarge between 2 to 75 times. It also can reverse the image, the print being white on a black background which makes it easier to read.

J. VERSABRAILLE AND BRALINK

These are portable machines on which the user can type and store notes. Both can be connected to a printer to produce 'hard copy'.

k. SPEECH SYNTHESIZER

NAHAL TYP . AND T. LA SPEECH Computer are speech synthes which can be connected to any computer with a serial interf It offers the following facilities.

- instant conversion of typed text into speech.
- number pronouncing facility
- adjustable speed of speech
- unlimited vocabulary.

This is very useful for those involved in teaching-reading skills to handicapped and [illegible] learners speech deficit. It is also of immense value to the blind wh used with BBC computer which has a braille keyboard.

FUNCTIONAL ASSESSMENT

Mrs. Jayanthi Narayan
Asst. Prof. in Spl. Education
NIMH, Secunderabad.

TEACHER CONSTRUCTED TESTS :
(Criterion Referenced Tests)

Criterion referenced evaluation implies that the teacher will assess a child's skills, primarily in terms of the actual operations that child can or cannot perform, rather than in terms of how he stands relative to some norm or relative standard (such as those utilized in formal assessment) (Hammill & Bartel, 1978). In other words, the individuals performance is evaluated in terms of a specific criterion that has been set for the student. Group comparisons are not of real value in terms of teaching a child with different strengths and weaknesses. As the tests are very specific, criterion referenced tests provide the teacher with exact information required for planning instruction.

In a criterion referenced test, for example, the child will be described as having mastered number concepts up to 10 and oral counting upto 20 rather than designating him as grade equivalent of K.G. or Class I. This kind of information is more helpful to the teacher for day to day instructional decision such as planning for teaching number concepts of 11-15 and oral counting 21 to 30 and so on. It is obvious that knowing that the child functions at K.G. or Class I level is not very specific to form immediate instructional programmes objectively.

As this approach yields information that is very directly usable by the teachers in planning for the child, such tests are usually constructed by the teachers, based on the available data and prior instructional goals. On testing a child if the teacher finds that the child does not achieve a criterion, then the teacher must consider that either (i) the selected criterion is not appropriate or (ii) the student probably needs additional work to complete the required task.

Differences between norm-referenced and criterion referenced tests:

(i) Norm referenced tests are characterised by the use of standardised tests.

Criterion referenced tests are characterised by the teacher made tests for the individual child.

(ii) Most of the norm-referenced tests can be administered only by trained personnel. As the criterion referenced tests are teacher constructed, the teacher can administer it to assess the particular area that he/she intends assessing.

(iii) The results of norm-referenced tests are compared with the existing normative data and is qualitative in nature. It is expected in terms of grade equivalent, age equivalents, quotients or percentiles and gives an overall picture of the child. The criterion referenced tests on the other hand (set for an individual) are interpreted in terms of the child's own strengths and weaknesses. It gives the specific details of the child in a particular area.

Norm-referenced tests have thus reliability and validity and are thus standardized as a big sample. Criterion referenced tests differ from child to child based on the need and the results are directly applicable to the planning and for teaching. However, norm-referenced tests are expensive as compared to the criterion referenced tests.

Advantages of Criterion Referenced Testing:

1. Flexibility in using this type of test for the various individual requirement.
2. These tests have provision for continuous assessment for noting progress.
3. The assessment of the students is relative to his or her own strengths and weaknesses and not to any group performance.
4. It can be constructed and administered by the teachers and does not need a specialist's help.
5. The tests are inexpensive. They are actually constructed from children's books and work books and teacher's manuals.
6. They provide the teacher with exact information needed for teaching because of their specificity.
7. Interpretation and scoring are simple.

Many norm referenced tests have not included disabled students in standardized samples and therefore they are less suitable for testing the handicapped children.

Precautions to be taken in criterion referenced testing:

1. The teacher must be careful to see that she does not set an inappropriate criteria for the student. By this, the student may be unduly struggling with a specific activity as the set criterion was too high for him to achieve. Criteria that are too low also can cause problems. Thefefore, the teacher must have a step-by-step assessment format so that she can exactly pinpoint where the child fails.

2. The efficiency of this type of assessment depends mostly on the competence of the person who assesses - the teacher. The teacher's bias and the reliability of the teacher as an observer and examiner must be taken into account.

3. The usual problems of lack of exposure to a certain task or history of inappropriate teaching must be taken into consideration before passing judgement.

4. Behaviours noted in general must be confirmed by the assessment. Effective criterion referenced testing necessitates careful planning, administration and interpretation.

CURRICULUM OUTLINE FOR MENTALLY RETARDED CHILDREN IN INTEGRATED SET UP.

Mrs. Jayanthi Narayan
Asst.Prof.in Special Edn
National Institute for the
Mentally Handicapped
Manovikas Nagar,
P.O. Bowenpally,
Secunderabad-500011.

INTRODUCTION:

Integrating mentally retarded children in regular class room is not similar to integrating children with other disabilities. For mentally retarded children as the level of mental ability will not be matching their normal peers, the curriculum should be modified to suit their needs, with focus on function oriented skills. In addition it is appropriate to maximize the integration in non-academic areas such as art and craft, sports, lunch time and so on.

The skills required to be trained at pre-primary level are very close to those required for normal children at that level. This would include self-help, motor, socialization, language and cognitive skills. In a pre school for normal children, the programming includes these areas and therefore, the same content can be maintained for the retarded children with emphasis on repetition and generalization of skills. As the child grows older, the curriculum in regular schools is basically academic oriented which a mentally retarded child will not be able to cope with. Therefore it requires modification to suit the level of the child and yet be functional. The following are the suggestions for modifying the regular education curriculum to suit a child with mild mental retardation in integrated set up.

Contd...2

PRIMARY LEVEL:

As the educable/mildly retarded children are qualitatively different from the normals, their class room performance must be viewed in terms of curricular programming that is modified appropriately to suit the target population. A systematic approach to the constructi[on] of curriculum of EMR children is necessary so that content can be tailored to the needs of these children. The objective for each child should be formed after having an understanding of the abilities, interests and needs of the child.

Primary group includes children who have acquired at pre-primary level readiness to undergo training in classes I to V. As the mental ability of EMR children is limited the curriculum of classes I through V of regular school must be modified to suit these children, restricti[ng] the academic work to basic functional academics.

Some of the skills listed for the EMR children in primary group may seem too high for them. The resource teacher should aim at achieving the maximum possible depending on the each child's level of functioning and not all necessarily in all the skills listed.

CLASSES I - V - CURRICULUM OBJECTIVES:

I. Maths - Book I, II & III

(1) Numeracy
- Ordering of numbers 1 - 10,000
- number values, quantity concepts and number placements 1 - 1,000
- number operations
  - (i) addition: multiple, using 3 digit [nos.] concept of carry over.
  - (ii) subtraction: using 3 digit nos. concept of borrowing
  - (iii) multiplication - using 3 digit nos. multiplies by 2 digit nos.
    - table upto 10
    - skip counting by 5's and 10's.
  - (iv) division: 3 digit nos. divisible by 2 digit nos.
- fractions (i) understanding the [basic] concepts.

Contd...

(ii) comparing fractions
(iii) conversions
(iv) simple additions & sub. tractions

- decimals (i) understanding the basic concept
(ii) conversions
(iii) simple additions & subtractions

(2) Measurement

(3) Weights

(4) Elementary Geometry

(5) Time and Calendar

(6) Money

(7) Number names upto 1,000 - oral recognition and naming

II. Language

(1) Reading - Book I,II, III, IV reading the Text-word analysis and word meanings.

(2) Comprehension - Upto level of Book III using supplementary readers and story books
- reading comics and children's magazines.
- language work books to introduce grammer including opposites, tense, gender singular, plural.

(3) Written expression- relating everyday happenings and events of interest.
- writing stories and compositions
- completing open ended stories
- picture descriptions and picture stories.
- letters to family and friends

(4) Oral expression - recitation of prose & poetry

(5) Oral English - conversation classes to encourage comprehension and to practice expression.

III. Environmental Studies

(1) History and Geography topics to increase knowledge of India and its states and an introduction to other countries.

(2) General Science

(3) Biology - Health and Hygiene

(4) Moral Science

(5) Civics

Contd...4

All above subjects to be approached as project topics and arts, crafts, language expression and outings to be correlated to Environmental Studies e.g. The Study of mountains in India will include paper models, clay models, pictorial charts, and expressions of language work, geometry and handwork.

The following subjects to be included as Integrated Activities in the Curriculum - It can be a class of unequal ratios of children - 10 from special class
2 from normal class

IV. Arts and Crafts

(1) Free painting using water colours, oil colours, crayons or pastels.
(2) Block printing, vegetable printing.
(3) Tie & Dye.
(4) Fabric painting
(5) Simple needlework
(6) Clay modelling
(7) Papier mache
(8) Macramae - chord knotting

V. Home Science
VI . Music
VII. Drama
VIII. Gardening
IX. Pet Corner

Can be introduced as optional hobbies.
Class- 2 activities selected from 5 for each child.

X. Physical Education

(1) Drill and Exercises
(2) Yoga
(3) Team Games

Equipment

1. A library stocked with supplementary readers, story books, comics and children's magazines.
2. Arts and Crafts materials.
3. Home Science equipment.
4. Gardening equipment
5. Percussion instruments for orchestra.
6. Pets
7. Stationary

Contd..5

CURRICULUM FOR THE SECONDARY GROUP:

Secondary level, which is otherwise known as the pre-vocational/vocational level of training aims at preparing a mentally retarded child towards aquiring appropriate vocational skills. At this stage, the functional academic work and vocational training are given simultaneously orienting the child to attain self sufficiency in the society. In addition social activities, communication skills and ability to enjoy leisure time also should be goals of this programme.

Therefore, with broad curriculum objectives, the following measures also must be taken:

1. Initially the student must be provided work experience in controlled setting.
2. A large number of opportunities must be provided according to each individual's needs and abilities.
3. The teacher must keep in mind the chances of the work-placement of the student in the community.

The following are the curriculum objectives for the secondary level. The resource teacher must keep in mind that each child is different from the other and therefore she should use these objectives as a guide line to form programme for each child.

Contd...6

CURRICULUM OBJECTIVES:

I. CORE SUBJECTS

1. Commercial maths

a) Practical use of mathematical opperations for solving problems of money, measurement, time etc.

b) Activities of social competence such as making simple budgets, bills and receipts, keeping acc. buying and using postage, concept of banking and saving, knowledge of rail and bus timings and fare etc.

2. Language

English: To know functional vocabulary list, key words commercial signs, alphabets, product labels and environmental signs.

Oral : Conversational English to understand instructions, express himself/herself and to attend telephone calls.

Written: Signing, writing personal information sheet

Hindi : Raising the standard to the literacy level recognised by the Open School Examination Board.

Reading: Introduce news paper, magazines and information books.

Written: Writing sentences, compositions and simple letter writing - business and social

3. General Knowledge and Social competence

The topics covered here could be the extension of the Environmental Studies of Classes I - V. Opportunities should be given for more practical experience aiming towards self-reliance and independence among the students to the maximum extent possible.

Contd...7

4. Domestic Skills:
   1. Dish washing
   2. Laundering
   3. Sweeping, mopping and dusting
   4. Basic cooking for self needs.
   5. Grooming for occasions and day to day
   6. Personal hygienes
   7. First aid and basic medical care.
   8. Basic needle work.

II. Optional Subjects: (Based on aptitude and interest)

Each student will opt any 2 and specialize.

1. Home Science
2. Horticulture (Gardening)
3. Weaving.
4. Fine Arts
5. Music - Vocal/instrumental
6. Needle work- embroidery, knitting, etc.
7. Craft - Such as block printing, basket making, carpentry, macramae, batik and tie and dye, light engineering.
8. Any other.

EQUIPMENT: (Only major equipment are listed)

Home Science:

- Cooking range
- refrigerator
- mixer - blender
- adequate cooking and serving utensils including pressure cooker, crockery and cutlery.
- containers for ingredients and cupboards for storage.
- aprons and other related equipment.

Horticulture:

- gardening equipment

Contd...8

Fine Arts:

- easel board
- water and oil colours, brushes
- aprons
- stationary

Music:

- different musical instruments depending on the aptitude and interest of the students and the availability of teachers.

Needle Work:

- Sewing machine and all related materials.

Crafts:

- respective craft equipment for chosen crafts.

EDUCATION OF THE MENTALLY HANDICAPPED

Dr. S.K. Goel
Reader in Special Education
Regional College of Education
Bhubaneswar - 751 007.

1. INTRODUCTION

In recent years there has been a growing interest in the field of Special Education. Interest in the handicapped child, from a research point of view, has stimulated investigation into almost every area of development. In education, research programmes have been designed to make available the most improved methods and techniques of presenting the curricula. Psychological evaluation is much more specific. The psychological tests are sharper instruments to detect every degree of achievable potential. To put the multidisciplinary approach into action, it is agreed that the disciplines like medicine, psychology, occupational therapy, speech therapy, social work, special education-should demonstrate how their professional expertise relates to the teacher in the class, and how the teacher can detect a child's difficulties so that the appropriate professional could be enlisted in the care, education and treatment of the child.

The awakening of society to this problem of mental deficiency will form an important step in the planning of education for the mentally retarded. The education of mentally retarded has to have overtones of vocational training with ultimate rehabilitation as its goal. It has to be an integrated education-rehabilitation programme in continuum. Since the cultural and material needs of society will be constantly changing, the pattern of special education and vocational rehabilitation will also have to change accordingly. Provision of finances or services will not solve the problem. The mentally retarded require genuine public understanding and acceptance. The community has to create an atmosphere for acceptance.

A mentally retarded child, it is agreed on all hands now, needs to enjoy the fundamental rights of existance, care, education and other opportunities for intellectual, emotional, social and occupational adjustment in his family and outside as much as any normal child. It has been realised that mentally retarded are like any of us in many respects and have a right to education, work and employment. Thus their right to be responsible citizens has now been accepted and this acceptance is now held as a hall-mark of the cultural advance of any society. To effect this thinking in practice, it is necessary to make special efforts to educate, train and employ the retarded at the level of their ability. This has to be done not out of pity and sympathy for mentally retarded but as a result of practical recognition of the fact that the use of abilities of mentally retarded will be beneficial to the society and the nation. The developed countries, after having seen an undesirable result of their clinical and advisory services, have now started realizing that the concentration ought to have been on community based services and primary health centres. But it is very important that in a big country like India, concentration must be in the rural areas and community based services on a large scale are very much required. One can learn lesson from the mistakes of the Western Countries in the field of mental retardation. In the Indian context it is necessary to emphasize preservation of the families because the mentally retarded can be managed better at the level of the family and community.

No doubt, it is difficult to assess the magnitude of the problem but it should not dampen to work for their welfare. The mentally retarded in whatever number or form they exist like every other citizen of India have a fundamental right for their training and proper education in addition to their proper maintenance and up-keep. They ought to be enabled to stand on their own legs and be not left to become parasite on society. This glomy picture, however, has a silver lining as according

to IQ distribution, around 75% of the retarded are known to be only mildly retarded, another 20% moderately retarded and only 5% beyond any hope who need custodial care. The burden of the retardate falls not only on the parents but on the entire nation. If the upward trend of incidence is not checked, the entire economic structure of the nation may crumble down. It may also adversely affect the smooth social and cultural growth.

Questions are often raised that when adequate training and education are not available for the normal youth, why educate the mentally retarded and why make the facilities for vocational and institutional training available to them ? Only by heightening community awareness of this social prohlem through education and communication to the public, this view could be changed. In India, several conferences, meetings and seminars have been held, many commissions have been appointed, many recommendations have been made and "White papers" have been issued. In all these meetings there was a move for better residential and day care facilities, provision for special schools for the mentally retarded and special classes in regular School systems. The country is now moving in the direction of integrating the education of the mentally retarded with that of normal children. Integrated Education of the Disabled (IED) is one alternative which is going to be very helpful in serving a large number of such children all over the country. The Government of India initiated the scheme of IED in 1974 which was modified in 1981. Hundred percent financial support form Central funds is available to all the States and Union Territories implementing this scheme. The programme is gaining meomentum in pursuance of National Policy of Education 1986 which envisages education of disabled children in common Schools as far as possible. The programme has assumed further significance due to the nation's commitment to expedite universalization of elementary education in the seventh five year plan.

2. THE TWO GROUPS (EMR AND TMR)

For educational purposes two fairly distinct groups may be made within the borad Category of the mentally retarded. Although the differences which characterize these two groups are of degree rather than kind, they are nevertheless educationally significant. These two groups are (a) The Educable Mentally Retarded (EMR) and (b) The Trainable Mentally Retarded (TMR). An educable child is characterised by academic retardation rather than by emotional or behavioural problems. The reason for his retardation may be with him, with the teacher, with the school system, with the family or with two or more of these. It is necessary to determine the relation between his mental ability and School achievement. The EMR fall in the IQ range of 50-55 to 70-75.

A trainable child is one whose social prognosis is sheltered living, such living may be in a sheltered workshop, an occupational centre, a sheltered job within the community, a residential facility or the home. The important consideration is that these children will need some type of supervision for their entire lives. It is also important to note that the presence of central nervous system (CNS) pathology is the rule rather than the exception with this group. The TMR fall in the IQ range of 25-30 to 50-54.

In the case of EMR, the rate of development is only a half to three quarters that of ordinary children. In the case of TMR, the rate would be a third to a half that of the average child. All this implies that the intellectual gap between the normal and mentally retarded child, which exists at birth or soon thereafter tends to increase with age and is permanent and largely irremediable. This must be realised and accepted by parents and teachers alike if positive attitudes to the problem are to be developed.

3. CHARACTERISTICS OF SLOW LEARNERS (BORDERLINE)

This category of mentally deficient persons who are called borderline or subcultural normals or slow-learners have a mental age from 8 or 9 to 11 or 12 and children have an IQ that falls approximately in the 70 to 89 range. This group of pupils presents a serious and difficult problem to schools because they constitute a large segment of the School population (18%) and are capable only of poor quality, slow and limited School achievement. Their characteristics as far as schooling is concerned are :

a) Their ability to deal with abstract and symbolic materials (language, number and concepts) is very limited.

b) Their reasoning in practical situations is inferior to that of average persons; their attention span is relatively short; they are unable to interrelate a series of instructions or elements.

c) They are unable to deal with relatively complex games or School games.

d) They must be provided with relatively small units of work of simple type; they require much more supervision than do more capable pupils; they require much external stimulation and encouragement.

e) Their understanding of rules of conduct in play and other social situations is inferior to that of average individuals.

f) They are appreciably retarded in School achievement. Their work is slow and is of inferior quality.

4. EDUCATIONAL PROGRAMMES FOR THE M.R.

Mental retardation is not primarily a medical problem. It is an educational, psychological and social problem. It is thus the responsibility of the educators

who should help in formulating and putting across various ways and means by which the retardates can be gainfully educated and contribute their mite to the society.

4.1 Educational and Service Delivery Options :

Many approaches have been put forth in educating the mentally retarded. The prevailing trend in this respect is to provide the mentally retarded children with an integrated educational system wherein they are able to study alongwith their normal counterparts, attend the Schools which the normal children do, and become socially and academically productive individuals. When considering educational options for the retarded, it is important to keep in mind that (a) educational placement should be based on the child's needs; (b) the child should be placed in the most facilitative (or least restrictive) environment; and (c) placement should be flexible enough that a child could be moved to a different setting if the situation warranted it. The main educational and service delivery options are : (a) The Regular Classroom, (b) The Special Class, (c) The Special Day School, (d) Home-bound Instruction, and (e) Hospitals and Residential Institutions. During the past two decades, especially the 1970s, a movement has grown to provide services to the mentally retarded in their home communities. Living arrangements such as "Group Homes", "Supervised Apartment Living Units", "Foster Family Homes" located in the local community are preferable to large residential institutions. It is best to regard retarded people as "developing individuals" who are capable of growth and development that can lead to favourable changes in their behaviour.

4.2 Provision for the EMR

The standards aimed at and the methods employed should be functionally oriented. All the School activities should serve practical and realistic aims for this type of child. The main aims in the education of EMR are to promote three A's of personal Adequacy, Social Adequacy and Occupational Adequacy. Personal Adequacy

means more than just the ability to take care of ones ordinary everyday needs. Social adequacy means helping the child to behave and conduct himself generally in ways that make him acceptable to his fellowmen both in work and in leisure activities. Occupational Adequacy is essentially practical. We have to impart those skills which will enable him to secure employment and become either wholly/partially economically independent. Of equal importance is the promotion of attitudes and behaviour in the work situation which make him acceptable both to his employer and his fellow-workers. In the context of occupational competence, the tool subjects of reading, writing and counting should be emphasised. It is a pre-requisite that before teaching the three R's, the retarded needs coaching and training in the learning of language. The teacher in the School should focus on language training as a priority item when she deals with the mentally retarded. The conversations and instructions to the child should be in simple worded sentences. The teacher should allot a few hours entirely for this exercise. Emphasis should be on enough language background to understand what is going on around the child, rather than on correcting the grammatical errors. Corrections should be confined to only gross errors. Since the imagination of mentally retarded cannot be stretched too far, story reading and story telling should be extremely simple with plentiful use of pictures to sustain his interest. Greater the mentally retarded child's command over language, greater the chances of his becoming socially integrated.

Very beautifully illustrated colour picture books could serve as useful medium in teaching of language and speech to the beginner and it helps to bridge the gap between learning to talk and learning to read. One could help the retarded to learn to read by using printed cards-some cards bearing in bold clear letters the names of familiar persons, familiar objects, action words, etc. The books used for reading exercises should be very

carefully chosen suiting the level of comprehension and interest of the child. A mentally retarded child who has learnt reading upto a primary level needs a great deal of patience in doing practice, greater supplementary teaching and reteaching what had already been taught and learned. Use of picture colouring, matching words and pictures, drawing, picture finding and story making would all be very effective techniques to adopt in teaching the mentally retarded. Any mentally retarded with a capacity for learning to read should be helped to develop it to the fullest extent, so that his social integration and later vocational training could be facilitated.

While learning to read may be relatively simpler because of the involvement of rote learning, learning to write would be rather a far more difficult task to accomplish. No serious attempts should be made to teach writing to the child until the muscles involved are sufficiently developed to perform with reasonable ease and comfort. As in reading, considerable repetition, practice and re-writing are essential before the mentally retarded child could learn to write to a certain extent.

The ultimate purpose then of the education which has been outlined for the EMR is to help the child in a positive realistic way to take his place in the community as a wage earner and a citizen.

4.3 Provision for the TMR

The TMR children will always require some form of protected environment, either under guardianship in their own homes or under care in an institution or sheltered workshop. This does not mean that they are incapable of deriving benefit from education. No child should be thought of as ineducable. Our aim should be to make them as self-sufficient, socially adjusted and economically useful as their limited resources will allow. With these broad objectives in mind the curriculum would tend to cover the following main areas.

a) Self care (eating, dressing, washing, toilet, etc.)

b) Social Training (group activities as in games, story-telling, simple dramatic work, good manners, aesthetic experience, moral training etc.)

c) Sensory Training (making full use of their senses, increasing awareness of themselves and the world they live in).

d) Language Development (Story-telling, simple dramatic work, discussions, picture books, outings, etc.)

e) Craft Work (Weaving, canning, basketry, rug-making, light assembly work, knitting etc.)

f) Academic Skills (Knowledge of simple everday words, simple calculations in money, etc.)

g) Music (helps to release energy).

Thus the educational programme for the TMR emphasises physical and social rather than intellectual skills. Self-sufficiency and independence are stressed so that the burden which they impose on their parents and the community is minimized, while they themselves enjoy as full a life as is possible for them.

4.4 Role of Parents as Teachers

In India the retarded child as far as possible is to be looked after by the family. The Western Countries had their experimentation with institutional care. Large institutions were built in and was considered that they are the ultimate answer for the care of mentally retarded. The adverse effect the institutional atmosphere had on the children was something far from

desirable. It had a dehumanizing effect on them and many inmates developed what is called the insitutional personality. As a result one came back to the concept of normalization and community care. Luckily in India we have not made such mistakes so far. The institutions that we have are the small day care insitutions where the individual goes during the day time and returns home to his family in the evening. This is fortunate because the handicapped individual is not subjected to the undesirable insitutional stresses as in the West. No institution can adequately replace a good home. It can only supplement it. It is better to keep a retarded child at home rather than place him in a boarding school. These children need individual attention which can not be provided by most of the insitutions on account of limited resources.

The family is a stable social institution in our country. The family bond is strong enough in India, the child should be absorbed in the family as far as practicable. In such an affectionate and secure atmosphere the mentally handicapped have lesser problems than they have in monotonous and mechanical institutional atmosphere. The concept of mother teacher needs to be given proper consideration. If the mother devotes time for the retarded child in a natural environment, all encouragements and material incentives should be provided to the family. The state may give some financial assistance to the family. Some weekly classes for the parents of the retarded may be organized in different localities which would enable them to be acquainted with the probable solution for various problems faced by them and they would also be able to interchange their ideas and views regarding the problems of their offspring with the fellow parents. The parents can also be assisted in home care by a number of specialized services such as visiting nurses, social workers and visiting house-keepers and by an opportunity for temporary short-term placement of the retarded child in an institution or summer camp in times of crises and increased family tension. Recent

experience clearly shows that the introduction of modern diagnostic, treatment and training facilities into the community reduces the need for long-range institutional placement, which in time will probably be limited to bed-ridden, profoundly retarded patients and those with severe emotional disturbances. Thus residential insitutions may be provided for those whose environment is not a congenial One or whose condition is so profound that demands a lot of care which the family cannot afford. Proper legal provisions need to be made for the protection of the retarded against exploitation. Coordination of professionals concerned with the problem of the retarded may be effected in the form of meetings organized periodically at different locations. Need for public awareness about the problem of retardation and development of the correct attitude towards the retarded is another pre-requisite. The special care and training should be started at the early stages of child's life in the home. The parents in the home environment are the first and primary educators of the child. The early years in the life of a mentally retarded child are tremendously important for his physical, psychological, emotional, intellectual and social development. The early years are the opportune years to teach basic self-care skills such as eating, toileting, cleanliness, bathing, dressing and grooming, playing with toys and friends, etc. If the child does not get a good start at home during the pre-school years, learning these skills becomes very difficult and slow in School. Great care should be taken to establish a daily routine by which the self-care activities become part and parcel of the child. Once he gets familiar with his routine, it will automatically follow what comes next. After the routine has been established there should not be frequent changes.

5. CONCLUDING REMARKS

To sum up : The mentally retarded are capable of development and this capability can be more easily developed if they enter an educational programme very early in age. Hence with early diagnosis and proper stimulation, the mentally retarded can be helped to reach as near a normal development as possible. This improvement and progress are subject to the severity of mental retardation; milder the retardation, greater the possibility of the mentally retarded getting integrated with the normals. Mentally retarded need considerable systematic guidance and encouragement to initate the behaviour of others and learn the various required patterns of interaction. Since they can get easily distracted, much tolerance, patience and flexibility on the part of the staff is called for. The mentally retarded need an intensive, repetitive and dedicated teaching with the help of adequate teaching materials. Hence smaller classes and more family based institutions are required wherein both dedicated trained teachers and cooperative parents could take up the task of education for the mentally retarded.

Thus educating the mentally retarded involves a great deal of effort on the part of the school, educators, public and the parents. The cost may be high but the end justifies the means. If we can help the mentally retarded child to achieve his fullest possible growth, then the cost is worthwhile.

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INTEGRATED EDUCATION OF MENTAL RETARDATES

Dr. S.K. Goel
Reader in Spl. Edn.
R.C.E., Bhubaneswar.

With the high magnitude of mentally handicapped population, limited number of special schools, shortage of trained manpower, financial constraints, lack of resources, etc. some alternative strategy for education of mental retardates needs to be developed.

The concept Integrated Education of Disabled (IED) is one such alternative which is going to be very helpful in serving a large number of such children all over the country. The Government of India initiated the scheme of IED in 1974 which was modified in 1981. Hundered per cent financial support from central funds is available to all the States and Union Territories implementing this scheme. The IED scheme is in operation in many States and Union Territories. Most of the States/UTs implementing the scheme are still at the experimental stage.

The programme is gaining momentum in pursuance of the National Policy of Education (NPE) 1986 which envisages education of disabled children in common schools as far as possible. The programme has assumed further significance due to the Nation's commitment to expedite universalization of primary education (UPE) in the seventh five-year plan. The Ministry of Human Resources Development (MHRD), in consultation with the National Council of Educational Research and Training (NCERT), has now revised this IED scheme. Some of the salient features of the revised scheme are :

a) The scope of the scheme has been widened to cover children with mild mental handicaps

b) Though one implementing agency is the State, the scheme envisages involvement of voluntary agencies in its implementation.

c) It stresses appointment of qualified special teachers as resource teachers. Specific proformas for application of grant and monitoring of information have been provided.

d) To ensure continuity of the scheme and reduce delay in the availability of funds, the funding procedures have been modified.

The stage of implementation has been upper primary or secondary in most of the States/UTs. Pre-primary education is almost missing. Close interaction among disabled and normal children in impressionable years promotes understanding and appreciation of the assets and limitations of each other. Pre-school education is the first stepping stone in the life of every child, normal or mentally retarded. The integration should start from the family, through immediate community and school, to the world of work.

The concept integrated education is an off-shoot directly emerging from the principle of normalization. Historically, facilities for mentally retarded were always considered separately from the regular school patterns. However, the recent trend seems to be in the opposite direction. While discussing the background, concept, characteristics, and issues relating to mental retardation with particular reference to mild mental retardation (50-70 points), Panda and Goel (1987) examined the conceptual basis and constraints of mainstreaming in relation to feasibility with supporting empirical research evidences. They further examined the inter-relationships between policy, education, development and research in the context of NPE-PA, 1986 and suggested a comprehensive coverage for policy formulation at the national level for the mentally retarded.

All types of provisions fer services to the handicapped have passed through certain stages of development. Karl Grunewald (1980) has identified such stages of which the first one is the diagnostic stage where diagnoses are made and plans are formulated to meet particular

needs. The second stage is that of specialisation where particular needs are met by special institutions. The third one is the stage of differentiation in which it is realized that a particular service cannot be standardized for all recipients. The relevant factors in this respect could be different age groups, degree of retardation and the like. The final stage is a composite one characterized first by decentralization of services, then provision for integration of services to the retarded with those similar services available to the non-handicapped in the community.

Special education is an enriched form of general education aimed at enhancing the lives of disabled persons. Thus special education bears testimony to the concept of equality of educational opportunity. In view of this ideology, the principle of normalization was evolved in Scandinavia. Nirje, Wolfens Berger and Bank-Mikkelsen are the main pioneers of this principle which states : "Making available to all mentally retarded people, pattens of life and conditions of everyday living which are as close as possible to the normal circumstances and ways of life in society". Consequently, "Integration" and "Mainstreaming" became catch words in the Special Education Vocabulary. Normalization, Integration or Mainstreaming refer to the process of interaction of handicapped and normal children in educational settings.

Normalization implies the utilization of services and facilities made available to all persons, normal or otherwise, but which are culturally appropriate. It does not been "to make normal".

Mainstreaming refers to the philosophy of educational integration, i.e. retaining mentally retarded children in the regular classroom with supplementary assistance by specially trained persons.

Integration is an outcome of de-institutionalization. Integration is always considered as social integration/academic integration or both. The strategy of integration is usually thought of as educational programming in which handicapped

children attend classes with normal children on their full-time or part-time basis.

From the parents' point of view, integrated schooling appears to be less stigmatising. This will also extend an opportunity for the normal children to have some interaction with the handicapped children. Ordinarily prejudices, less compromising attitude, bias and ignorance prevail in most situations discouraging any close relationship between the two. However, under the IED scheme, children as well as teachers would become exposed to the retarded which would help them to develop an understanding and tolerance for them.

Patterns of Integration

There are four patterns of integration of mentally retarded children.

Full or Complete Integration

The mentally retarded children are enrolled in a regular class throughout the day and they receive support from the special teacher at some time during the week. Hence, the retarded children receive all the same services which are available to all the children in the classroom.

Partial Integration

Mentally retarded children are enrolled in a regular class but they avail the services of resource room and the resource teacher everyday in the school premises. The amount of time spent in the resource room varies but they generally spend a part of the day in the resource room. Partial integration may include academic and non-academic subjects.

Special Class in Regular School

In this system mentally retarded children are enrolled in a special class but they are integrated into a regular class for one or more subjects daily.

Reverse Integration

Normal children are enrolled in a special class so that they participate in academic and non-academic activities. This is often done on a short-term or temporary basis.

The principle in adopting a particular pattern of education should be that it is matched with the capabilities of the child. The mentally retarded children are assessed to identify those who need special education programmes and to determine where instruction should be begun. It is best to place the child in the least restrictive educational environment that meets the child's needs. There is a trend to develop and offer infant intervention projects for very young children to redue the effects of disabling conditions on later development. The pre-school handicapped child has the same needs, wants and problems as all other children, but he also has additional difficulties to overcome. The areas of development of most importance in young retarded children are gross-motor, fine-motor, perception, conceptual, social-emotional, communication and self-help. It is utmost essential to include parents in the education programmes for their young handicapped children (Goel, 1987a).

Education for All Handicapped Children Act

One of the major objectives of providing an integrated setting for mentally retarded is that they must be mainstreamed in the least restrictive enrironment. In the USA, the concept of integration has been embodied in federal legislation in 1975 which is implmented by "Education for All Handicapped Children Act" (PL94-142). It was regarded as the "Civil Rights Bill of Education". The major provisions of this act are :

i) Free and appropriate public education for all handicapped children between 3-21 years of age.

ii) Safeguards to protect the rights of handicapped children and their parents.

iii) Educating handicapped children with non-handicapped children to the maximum possible extent in the least ~~restrictive environment~~.

iv) Developing and implementating an IED for each handicapped child.

v) Involvement of parents in the education of their handicapped children.

The basic intention of this law is to prevent an individual from being stigmatised through classification and labelling. When PL94-142 was developed, both professionals and lay persons confronted various attitudes and there has been a mixed bag of reactions-some favourable and some unfavourable.

Levels of Integration

Integration in the society to the fullest extent of the individual's capacity is part of the framework of the least restrictive environment. Nirje (1977) gave six basic levels involved in the concept of integration.

Physical Integration

Physical Integration means reduction of Physical distance between mentally retarded and normal children. Physical integration has to do with the basic security needs which are drawn from physical settings-living in a ordinary house, attending classes in a regular school building, working in industrial or business areas, and taking an active part in regular leisure-time environments.

Functional Integration

Functional integration is using the necessary and ordinary segments of the environment such as gyms, schoolyards, restaurants and public transportation along with the rest of the children. That is, functional integration means reduction of physical distance between two groups by joint utilization of resources.

Personal Integration

Personal integration pertains to meeting the retarded person's need to be loved through personal interaction with parents, brothers and sisters, friends and marriage partners.

Social Integration

Social integration deals with the respect and esteem that the retarded person experiences in the community.

Societal Integration

Societal integration provides opportunities for self-fulfilment, growth and achievement as a responsible and contributing citizen. Societal integration refers to adults and signifies that the mentally retarded have the same access to resources as others, the same opportunity to influence their own situation, have the same productive working role and form part of a social community with others.

Organizational Integration

Organizational integration focuses on the proper balance between generic and specialized services.

Implementation

To ensure the benefits of the IED programme, the administrator, who is obviously the Principal of a school of normal children must be a qualified person and well versed with the problems of mentally retarded children. Also, the teachers must have knowledge about the assets and limitations of mentally retarded children. It is with this objective that Government of India is planning to start various training programmes in Special Education so as to enable the teachers to implement the IED programmes effectively. The Rehabilitation Council has already standardized more than one and half dozen training courses during the last one year for professionals dealing with disabled persons. The National Council of Educational Research and Training (NCERT) and the National Institute for Mentally Handicapped (NIMH) are developing curriculum, teaching materials and organizing training programmes for the untrained teachers from time to time. Special Education Cells have also been created in all the four Regional Collges of Education under NCERT for ~~organizing~~ various training programmes

in the field of Special Education. The National Council of Educational Research and Training also prepared a draft syllabus for B.Ed.(Special Education). The following broad criteria may be adopted by the administrator to run an effective IED programme.

Admission of M.R. Children

Before admitting any handicapped child, the administrator must ensure that a particular handicapped child has only one nature of handicap and is not multiply handicapped. For instance, if the child is mentally retarded, he should not have any additional handicap like blindness, deafness, etc. Secondly, the administrator must ensure that the MA of the handicapped child is at par with his normal counterpart. Thus the retarded children will be chronologically much higher in age than the normal children in the class.

Availability of Instructional Material

The administrator and regular teachers must ensure that appropriate instructional material is provided for the educational needs of the mentally retarded children so that they may keep pace with the normal peers. Intensive efforts must be made to devise special teaching devices so that their learning ability can be improved. If the teacher is aware of the advantages of these devices, it may be beneficial to impart training to the retardates.

By instructing the retardate with material suited to his intellectual level, it is possible to improve his capacity to learn as well as apply the learning to varied situations (Goel and Sen, 1984, 1985). Instructional materials should contain a number of intrinsic elements in order to enhance their effectiveness in the class. The crucial factor lies in the teacher's responsibility to plan and develop and carry out consistent programmes that will fulfil the immediate or long-range goals of education for the retarded. For too long, teaching aids have been thought of as blocks, beads, clay, puzzles, hammers, scissors, etc. - the list is endless. When

designing the material, questions such as "Does it enhance the attention ?", "Does it serve the purpose?", "How does it clarify or reinforce the teacher's verbal explanation?" must be considered. There is no doubt that concrete aids do help to make lessons more meaningful. They serve to attract and hold the pupils' attention. Concentration may be extended for longer periods than by purely verbal explanations. A well-designed teaching aid having more attention-getting quality arouses curiosity and interest in the subject, It certainly adds variety and broadens the learning scope. However, there is always the danger that pupils might pay more attention to the "aid" at the expense of seeing the significance of the subject to be learnt. The teacher must be alert to the moment when the aid becomes merely a "plaything", The balance between the "subject" and the "aid" is at times a fine hair--line.

The most recent innovation of teaching the children in classroom learning is through computers. Electronics is making revolutionary strides day to day and many sophisticated aids and equipments in the field of information and communication are being developed. The NPE-POA(1986) has suggested the induction of technology in education and rehabilitation of the disabled children. Thus a project on the development of softwave for the education of the handicapped has been planned by the National Council of Educational Research and Training.

Effective Resource Room Programme

Before supplying the equipment and instructional material to the handicapped child, a Resource Room teacher must be made available to teach the handicapped child to use these aids and equipments.

Apart from imparting educational instruction to the handicapped child, the resource teacher must be in constant ~~touch with~~ his parents for periodic guidance and counselling. The Resource Room will have essential equipment, learning aids and material. Some core facilities can be provided in each of the institutions individually (i.e. in the Resource Room) and some on shared basis (i.e. in the Resource Centre). Goel (1988)

has discussed various Guides/Catalogues/Technical Aids Information Systems/Databases which have been developed for the disabled in India and abroad.

Coordination between Regular Teacher and Resource Teacher

The regular teacher and the resource teacher share responsibility jointly. The resource teacher not only helps these children to learn special skills but also helps regular teachers, administrators and parents in understanding the abilities and disabilities of these children.

Teaching and Learning

Learning is greatly influenced by organismic, task, method and environmental variables. Readiness for learning, motivation to learn, reinforcement, exercise, distributed practice, active participation, and over-learning are some of the important methodological guidelines of learning process. Since the retarded children often have difficulty with attention, short-term memory and association, there is need for overlearning to be an integral part of the educational programme. To control the chance of errors, accuracy instead of speed should be stressed. This is especially necessary in the early stages of learning when new and basic concepts are formulated, which will later form the basis for subsequent learning. Successful teaching requires : (a) careful grading of work, (b) more practice and repetition of main skills and facts with suitable variations and manipulation of the material, (c) visual activities through the use of pictures and concrete examples, (d) high motivation, (e) development of habits of attending, (f) some standard routines so that pupils know what to expect and experience a feeling of orderliness, (g) the teacher should speak slowly, use simple words, short sentences and time for words to "sink in", as too many words at a time tend to confuse the children, (h) break each task into the simplest components, define each step clearly, reward each step at once and not when the task is completed. The teacher can develop a method of prescriptive

programming a number of skills through task analysis-both academic and social, as well as pre-vocational and vocational-throughout the student's school day. The systematic use of task analysis for programming school activitics ensures the student's active involvement in as many activities as he or she is capable of responding to in an appropriate manner. Task analysis thus includes many of the features of a good clinical/prescriptive approach : it requires individual evaluation and diagnostic decision-making; it specifies an instructional sequence; it suggests teaching strategies; and it provides a system for recording data (Goel, 1987b).

Even though the mentally retarded appear to have slower learning and poorer short-term retention than normals, it is important to point out that the mentally retarded can learn a variety of responses sometimes almost as well as the normals. There is little available evidence of an appreciable deficit in long-term retention when the metnally retarded are compared with the normals, provided the two are compared on original learning (Denny, 1964). The relative inability of the retarded to inhibit responses may account for short attention spans. The deficits in duration of attention, symbolic behaviour, inhibition, and delayed response.

It has been seen that the basis of good memory is good learning. Therefore, the problem is to see how the learning process of the mental retardates can be made more efficient. The reasons for the learning deficit do not seem to be in the area of instrumental learning but rather in that of attention (House and Zeaman, 1958). If the item can be made more attention-catching, it will reach the retrieval phase earlier than other items. Novelty increases initial attention because learners are atracted to novel stimulus (Goel, 1982, 86).

These ideas about enhancing attention of retarded children by making instructional materials more informative and meaningful are effective only to the extent that they are fully understood. The teacher is the key

person in this process. Without the teacher's skill even the most sophisticated curriculum will be limping and boring.

Development and Programme Support

The purpose of the IED scheme must be explained to regular teachers, counsellors, social workers, normal students, local and district level supervisors and administrative personnel. The job of each person must be clearly understood. Successful integration can only develop when each person works in partnership.

IED Programmes in Rural Areas

About 80 per cent of mentally retarded children are living in rural areas. It is disheartening that all the IED programmes are available in urban areas. The handicapped have to leave their families and come to urban areas. It is also disheartening that our trained personnel are not ready to serve in rural areas. Some package of incentives may encourage the resource teacher to make the IED programme a great success. The basic purpose of the IED scheme is defeated if the handicapped have to leave their families and shift to urban areas for receiving educational facilities. The IRDP and ICDS can play a vital role in this direction.

An Overview

Each person is unique and therefore individual differences are universal. This tenet is the basis for negating all efforts that keep retarded persons out of the mainstream of society. The principle of normalization affirms the humanness of all retarded individuals, whatever their degree of disability, and assures them of the right to life, liberty and the pursuit of an existence as close to normal as possible within the least restrictive environment. The burden does not fall on the retarded person alone. The community and the retarded person must harmonize their expectations.

The mentally retarded are capable of development and this capability can be more easily developed if they enter an educational programme very early in age. Hence

with early diagnosis and proper stimulation, mentally retarded can be helped to reach as near a normal development as possible. This improvement is subject to the severity of mental retardation, the milder retardation, the greater the possibility of the mentally retarded getting integrated with the normals. When considering educational options for the retarded, it is important to keep in mind that (a) educational placement is based on the child's needs; (b) the child is placed in the most facilitative (or least restrictive) environment; and (c) placement is flexible enough that a child could be moved to a different setting if the situation warranted it. Considerable interest has been shown in the recent years on the need to equalize educational opportunity among special groups of children. To provide equal educational opportunity to this group of children, specific strategies need to be evolved. Integrated Education for Disabled Children (IEDC) has been considered to be a viable approach for achieving this objective. The Project Integrated Education for the Disabled (PIED) based on this approach was included in the GOI-UNICEF Plan of Operation for 1985-1989. The Programme of Action (POA) for the implementation of the NPE-1986 has stressed the need to strengthen the IEDC scheme to realize the goal of the UPE for this group of children. The PIED has been formulated in collaboration with the UNICEF and is expected to achieve the following objectives :

i) To increase enrolment of disabled children in general schools so that they can be educated with other children.

ii) To improve retention of disabled children in general schools through improved educational facilities by way of curriculum adjustment and adaptation of instructional methods and materials to their needs.

iii) To improve achievement of disabled children.

iv) To develop context specific delivery modalities to achieve the above objectives.

The POA stressed that as education of the handicapped in special schools is very costly, "it will be ensured that only those children whose needs cannot be met in common schools are enrolled in special schools. Once they acquire communication skills and study skills, they will be integrated in common schools". The accomplishment of this task requires careful planning and efforts to mobilise resources within the education framework as well as supportfrom health, welfare and labour sectors. Thus educating the mentally retarded involves a great deal of effort on the part of the school, educators, public, and parents. The cost may be high but the end justifies the means. If we can help the mentally retarded child to achieve his fullest possible growth, then the cost is worthwhile.

In a highly competitive world where success is judged by achievement, it is but natural that handicapped persons would lag behind their non-handicapped peers as they are disadvantaged in several ways-academically, physically, vocationally, and socially. The principle of normalization, though evolved in Scandinavia, is universal in appeal and bears testimony to the ideology of "equality of opportunity for all". It is true that many practical difficulties and drawbacks do exist, both in developing and developed countries, but they can be overcome through community support, financial support, manpower development, orientation and training programmes, political will and gaining knowledge in understanding the assets and limitations of mentally retarded. The NPE will lay special emphasis on the removal of disparities and to equalise educational opportunity by attending to the specific needs of those who have been denied equality so far. The objective should be to integrate the physically and mentally handicapped with the general community as equal partners, to prepare them for normal growth and to enable them to face life with courage and confidence (National Policy on Education, 1986, Pp 6-8).

Normalization determines the effectiveness of service systems as these relate to the individuals and individation

regards the uniqueness of the human being. Some of the individual differences are obvious, such as certain physical disabilities, and others are concealed to a certain extent, such as IQ, learning potential, and social adaptation. Yet it is uniqueness that makes for the individual strengths and limitations that should be utilized in upgrading the knowledge and skills of the retarded person. The path to ards self-acceptance is particularly rocky for the retarded persons. They experience dissatisfactions in both interpersonal and intrapersonal responses. Thus the retarded individuals are constrained from moving from dependence to independence. Risks, rights and responsibilities are interwoven with acceptance. Opportunities for taking risks are the bases for obtaining and using right and for assuming the responsibilities associated with these rights. What every retarded person needs is the same as what every non-retarded person needs - self-fulfilment, self-dependence and self-esteem.

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COMPUTER ASSISTED INSTRUCTION FOR CHILDREN WITH MENTAL HANDICAP

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Dr. Sushil Kumar Goel
Reader in Special Edn.
R.C.E., Bhubaneswar.

- Microcomputers can be the single greatest tool that educators have for teaching handicapped students.
- If teachers donot become computer literate over the next 10 years, they may be left behind in the field.
- Teachers should consider the use of microcomputers as management tools.
- As objectives are written by teachers in the school, they can be stored on floppy disks and shared among teachers.
- Accomplishing this storage requires that a standard coding system be used.
- One example of a coding system uses numbers in sequence by assigning a whole number to a goal, the whole number plus a decimal to short-term objectives related to the goal, and so on down to instructional objectives.
- Microcomputers in the classroom can help teachers manage daily tasks such as record keeping and IEP development, or they can be an instructional tool, helping students to practice learned skills.

- The use of computer as a sophisticated teaching aid which presents the instructional material to the student and interprets his response is known as Computer assisted instruction (CAI). The use of computer to assist the teacher in managing the educational process by assessing the student's capabilities and prescribing a course of instruction in known as computer managed instruction(CMI)
- Thus the computer can be used to teach a large number of students.
- How is this different from a lecture in the classroom, film, radio or television ?
- The main argument in favour of CAI is its ability to provide individualised instruction.
- Children differ widely in their abilities and they work at different rates and with different levels of accuracy and comprehension.
- The conventional schools are unable to offer courses of instruction tailored to meet the needs of each individual child.
- The computer can handle many students and allow each to proceed at his own pace and level of achievement.
- An important aspect of CAI is the provision of immediate knowledge of results.
- The system also demands the attention of the student during the entire session, just as an individual tutor.

- CAI has several advantages that can be applied to the instruction needs of many retarded learners.

- Rupley and Blair (1983) have identified six advantages of microcomputers that can make them helpful to retarded students.

  (a) Enhancing student interaction and motivation
  (b) Providing immediate feedback
  (c) Providing record-keeping capabilities
  (d) Providing needed reinforcement
  (e) Allowing self-paced instruction
  (f) Freeing the teacher to work with other students while some students work on the computer.

- Ager (1985) reports on the development of the MICROMATE system-a microcomputer-based teaching system for the severely mentally retarded.

- Ager believes that any task suitable for a person who is severely mentally retarded needs to be (i) fully accessible (i.e. any equipment or materials required must be easy to handle), (ii) interesting (i.e. capable of attracting and maintaining an individual's attention); and (iii) reactive(i.e. something will happen when the individual responds appropriately or providing rewarding consequences).

- Microcomputers can be a great asset in teaching, reading, spelling, written expression skills, arithmetic skills, communication skills, etc.

- The application of microcomputers in classrooms for retarded learners is more widespread.
- Microcomputers can be extremely useful for the teachers if they understand some of the basics of programming. However, these skills are not a pre-requisite for using CAI.
- Teachers must know the basics of hardware (e.g. computers, monitors, disk drives) and care of the equipment.
- An important task is to choose the right software for using in the classroom.
- Kamil (1984) has identified some key concerns in evaluating educational software, beginning with the question, "Does the programme do something better than what could be done without a computer?".
- A key concern involves judging the content and deciding whether or not it is appropriate to the existing curriculum.
- Retarded learners require frequent and meaningful feedback; therefore, teachers should review whether or not the programme provides frequency and specificity of feedback.
- Also, the programme's use of attention -getting devices such as pictures, animation, music, and colour capabilities can make a difference in its effectiveness.

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- Another important aspect of software is the speed at which the material is presented. Retarded learners will vary in how fast they can process information and a programme providing varied presentation speeds can be the most efficient choice.

- Also, cost effectiveness is an important consideration. Cost effectiveness relates to the amount of content available. One programme can cover considerably more information than another and yet both will cost the same amount.

- Thus the microcomputer is extremely useful as a teaching aid.

- Initially it may seem expensive but it is quite reliable and economical teaching aid for the retarded children in the long run if the schools are able to procure appropriate hardware and software.

- India should take a lead to provide trained manpower, suitable hardware and software for the benefit of retarded children in regular and special schools.

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GUIDANCE AND COUNSELLING TO MANAGE THE EMOTIONAL PROBLEMS OF PARENTS OF MENTALLY RETARDED CHILDREN

The essence of counselling is to build up with the families of mentally retarded children an ongoing relationship to help the parents cope with the problems and to promote child's welfare in every possible way. Counselling is very much more than giving advice to parents. The counsellor attempts to work through the problems together with the parents. The aim is to help the parents understand the nature of the problems and to come to some understanding of their own reactions to the situations.

When working with the handicapped children the focus of attention should be the entire family. We often forget the fact that the family may be as much a casuality as is the handicapped member. The effect of the child on the family is an important factor of consideration. What the individual child is and what he does affects all family members; their behaviour in turn affects the child. When the child acts the mother reacts and the child in turn reacts to the mother in a circular fashion.

Parents of children with special needs often experience a host of associated difficulties including depression, lowered self esteem and a lessened enjoyment in parenting. The parents pass through several phases including disbelief, guilt, rejection, shame, denial, and helplessness, when they realise that their child is handicapped. And the addition of the child with special needs to the family unit affects all the members' lives, the marital relationship, sibling relationship, social ties and participation in social activities. It is known that the divorce rate and suicide rate, among parents of mentally retarded children are high. Family members commonly feel embarassed at having a mentally retarded child. The child usually requires extra time, care and attention and the parents usually withdraw in social life.

The goals of counselling thus are intellectual, emotional and behavioural in nature. In the intellectual level the parents of exceptional children need information

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concerning the nature and extent of their child's problems, causes of it, information concerning facilities and services available for their care, treatment and future of these children. The counsellor should help the parent, to realize the nature and extent of their problem as early as possible. Many valuable years are often lost because of failure either in diagnosis or in parental acceptance of the factors. Parents of mentally retarded children often say, "why did not some one tell us" or "if we had only known sooner". Understanding and acceptance of diagnosis can not be forced. Time is required and counsellor can only present the available data as completely and as honestly as possible and hope for its eventual acceptance.

It is important to help parents with their attitudes and feelings as it is to provide them with adequate information. Counsellors must concern themselves with the parents fears and anxieties and their feelings of guilt and shame. They should attempt to increase parents ability to tolerate tension. Adequate counselling will also result in modified behaviours by parents. Every counselling programme should involve specific plans for the family and the handicapped child.

THE ROLE OF SPECIAL TEACHER AS A COUNSELLOR:

The initial stage of telling the parents about the diagnosis and other details is of much importance. However, it isnot just the first period which is crucial. Mental handicap is a permanent condition lasting throughout life. Parents need a constant service, providing information, support and physical or financial assistance, which reflects the development and changing needs of the child. Here the special educators' role is of much importance as they are the people who continue to see them regularly. "What shall I do about school", "what sort of work placement would be best" and so on are constant querries in parents' mind.

Involvement of parents in the educational process of handicapped children enhance the educational opportunities of children with special needs. The generalisation of skills learned in school to other settings

requires that the parents should be an active participant in the learningprocess. A policy of parental involvement should also ensure that families become more aware of their children's capabilities and by taking a positive approach to their children they will be less likely to find themselves coping alone with possibly increasingly disruptive behavioural problems.

School based parental involvement encourages parents to help each other by forming self-help groups, thus reducing the likelihood of the social isolation of families with a handicapped child. This group can also be used by other professionals as a vehicle for more general discussion with parents who experience common worries and problems concerned with other aspects of handicap. Some parents are unwilling and unable to visit clinics or parents' groups on a regular basis. They may need domicilary service. Sometimes they prefer individual treatment where they feel less threatened.

Through counselling and participation in groups with other parents' experiencing similar difficulties, parents may develop more healthy and successful coping techniques, Most parent counselling strategies for a special teacher thus fall into three categories.
1. Informational programmes to provide parents with facts concerning their child's handicapping condition.
2. Psychotherapeutic programmes to help parents deal with their own problems and to understand the conflicts that bring about emotional difficulties in themselves and their children and 3. parent training programmes to help parents develop effective child management teaching skills.

The parents of handicapped children hold the key to any successful program for helping their children. Consequently parent counselling is a necessary component of programmes providing services for handicapped students. A commitment to children with special needs also clearly carries the responsibility of providing assistance to their parents. On the other hand, the tremendous strength and support parents gain from knowing that there is someone whom they can trust and who is always available is of paramount importance in coping with their own emotional problems.

Source : NIMH Publications.

HOME TRAINING OF MENTALLY RETARDED

DR. S. K. GOEL
Reader in Special Education
Regional College of Education
Bhubaneswar - 751 007.

In the early years of life, a mentally retarded child poses serious problems regarding care and management at home. Many parents feel unable to cope with situations which arise from day to day in giving early training to the child towards achieving independence in some of the areas of living. Seeing the child's slow development and infinitely small achievements, some parents conclude that he is beyond any training.

The major share of the burden of facing the problems of the retarded child falls on the mother who is expected to teach him good habits and skills in the same way and possibly at the same rate as the normal child and it creates problems in the area of relationship with her husband and other family members if she fails to train the retarded child. As per the traditions and customs of our Indian families, the mother is expected to play many roles and has social obligations which one cannot easily overlook. And when there is a retarded child at home, her plight turns her to anxiety.

A retarded child is slow and often does not respond naturally to external stimulus <u>like</u> a normal child. The parents have to create situation for a retarded child in which his development gradually takes place whereas a normal child because of his zest and curiosity creates situations where in he learns spontaneously. This leads the mother to often assume it to be indifferent rather than a sign of retardation. It is only when the developmental lag widens that she and others at home realize that all is not well their child.

The child's passivity and his lack of coordination in the early years, tends to make the mother do everything for him with the result that the child's helplessness and dependence progressively increases. Moreover, due to the lack of spontaneity and response in the early years, the mother especially does not feel motivated. A pattern of behaviour sets in such a vicious circle and the retarded child's world gradually becomes restricted, narrow and finally limited. This adds to the slow mental development. The more the delay in terms of training a retarded child in his care and management, the more difficult it will be to teach him skills and to help unlearn his wrong habit patterns

later. It is very important to train a retarded child right from his infancy so that no time is lost in enabling him to become independent to a large extent. Early home training in terms of elementary self-care skills, eating, toileting, cleanliness, dressing and undressing, bathing etc., good habits and manners are pre-requisites for his next stage of development. It is not the child's retardation which creates problems as much as his lack of training which affects his total well-being. The early years are the opportune years to give a spurt, a push towards development and growth. If this time is lost, then the loss is irrepairable. Infact, training becomes synonymous with education in the case of a retarded child. It is this training which forms the basis of his education and not the learning of numbers and alphabets which parents in their misconception and anxiety expect of the child when he is admitted to a special school. In fact, training precedes learning.

It is unfortunate that very few special schools in India admit retarded children below 6 years of age. It is the pre-school period of a retarded child when he needs maximum attention. The professionals should guide the parents at this stage by giving them practical demonstration of home-training. If a good start is given during this part of his life, a retarded child acquires good habits and behavioural patterns which ultimately in the long run contribute to his acceptance by family and society.

A retarded child has to be taught the "how" of skill and habits because he cannot learn these by himself like a normal child. A retarded child has to be taught good habits because he lacks the faculty of judgement - the inability to distinguish good and bad, right and wrong.

Parents assume that because he is retarded, he cannot be disciplined. This is not correct. A retarded child more than the normal child needs discipline, right from the early years and more so if he is impulsive because of brain damage. When he knows the limits within which he can function, then only his sense of security and acceptance will arise. When the retarded child becomes manageable or learns to be independent in self-care skills, even then the training does not stop. It takes him many years to acquire these skills and training in fact lasts right through adulthood. Parents become over-anxious when they give up imparting training at an early stage and the retarded children acquire bad habits

due to lack of judgement and reasoning. Like normal children, retarded children also replace the wrong habit by the right one when they see that it adds to their acceptance and when they acquire self-control by way of training and discipline. This comes only where discipline is consistent and where adult behaviour is exemplary. Discipline and training go hand in hand, both at home and in the school in the case of retarded children.

The normal functioning depends on his ability to manage by himself with eating, toilet, dressing, bathing, cleanliness etc. It is in these areas that the burden of caring and management of a retarded child becomes difficult for the mother. A regular, daily routine becomes the first step in acquisition of good habits. The familiarity with his routine will add to his security and lessen his confusion. Once a retarded child gets set in a habit or routine, he finds it difficult to change to another one because he takes considerable time to adjust to a different routine or habit. Whenever a temporary change in his routine or programme is necessary, the parents should prepare him mentally for a change. Many times this is over looked by adults and the child is considered as being stubborn, uncooperative and negative and is accordingly punished. A retarded child is not born stubborn, negative or uncooperative, it is the attitude and handling of those around him which make him so. Unfortunately all retarded children are labelled this way but those who have worked with the retarded will agree that they ~~kx~~ are very much sincere, obedient, cooperative and positive when they have established good rapport with understanding adults. Since their whole training is based on the development of good habits in all areas of living, it is therefore necessary to teach him those habits which are essential to his independence and social acceptance and which he can retain.

The retarded child develops fewer interests because he has fewer opportunities to explore his environment and he thus remains at one stage of development for too long compared to a normal child. This becomes the central issue in later years when the retarded adolescent is unable to spend his leisure-time meaningfully. Retarded children therefore require general training to help them to acquire experiences which come out of purposeful activities-activities which will improve his coordination and strengthen his muscular development; activities which will develop his understanding so that he comes to under-~~stand commands and~~ learns to carry these out and those which will increase his attention.

Play is education in the case of retarded children. It is through play activities that the child will learn to acquire many of the concepts in a more congenial and natural way - he will learn to explore his environment and thus get the necessary stimulus fundamental to his development.

Household chores are also a part of training because such chores help them in strengthening their coordination and in building their self-image as useful members of the family. Young children love to do things which their mothers do and if a young retarded child is given the opportunity to help his mother in small simple tasks, he will be ready for training in daily household chores. Otherwise, parents will find it much more difficult to train a child in later years to carry out household chores if he has not been training in early years. In the later years, when he has to cope up with household chores himself when there are no adults in the family to help him, he will find it not only difficult but rather impossible to cope up with the demands made upon him.

We therefore see that as far as home training is concerned, both parents and teachers are joint educators. A retarded child will be able to extend warmth and cheer if he has received them at home and at school. If he has been loved at home and at school, then he will be able to love others also. Retarded children are more like normal children. They have the same needs, emotions and feelings as normal children have .. parents often despair when neighbourers prevent their children from playing with the retarded child. Their fear is that their normal child may become retarded or may acquire bad habits. We thus see that the retarded child is deprived of normal social relationships right from his early years though no fault of his own. It is in a special school that a retarded child often builds social relationships with other children and comes to participate in group activities for the first time.

TOILET TRAINING OF RETARDED CHILDREN

BY DR.S.K.GOEL

There is a wide age variation when the retarded children can control their bowels and bladders. Some parents are very eager to keep their children dry and clean and they begin training very early even before training in other self-care skills. In the case of normal child, the training may be given at the age of 2 years approximately whereas a retarded child should be 4 or 5 years of chronological age when he can be given toilet training. There are three basic requirements about toilet training :(a) the child can be trained only when he is ready physiologically, (b) he can be trained when he is mature enough to comprehend that he must identify a certain feeling with a word which will take him to a certain place in his home where this particular function is to be done and (c) he must have reached the approximate mental age and whichhe can be given toilet training.

The parents must check if the child shows the following signs of readiness.

1. A Child can be toilet trained if he is not continuously wet. The parents must wait if he is not dry for a period of 1 to 2 hours.

2. When the child begins to understand that you praise him for moving his bowels or urinating while in toilet, this is the time to start training.

3. Does he show the need to urinate or move his bowels in the form of a word or a gesture ? If he has not started using words, his face may get red with strain and he may become quiet or he might cross his legs or become active and jumpy. When he indicates these signs, it shows that he recogni the feeling of bladder being full before relieving himself.

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4. Can he go to toilet either by walking or crawling, even the physically handicapped children are sometimes ready for toilet try before they learn to walk. But it is very seldom that a child is able to control his bladder before he has attained maturity to walk.

5. It will be easider to train the child if he understands the reason for caring to be clean.

When he shows these signs of readiness, train your child from the beginning to use the regular toilet in your home. This will save time because relearning is not necessary. Make the toilet seat comfortable by using a small seat over it with an opening sufficient enough that he does not have fear of falling in and his feet rest on a supporting surface like a stool, In Indian toilets, it is usually difficult for a young retarded child to put his feet across the toilet basin and it is better to have a raised step on either side of the toilet basin so that he knows where exactly to put each foot. It is always better to have small size Indian toilet for young retarded children in special schools and homes so that the training does not become an impediment. There should be a handle bar fixed across on either side or one side of the wall sothat he may hold one when raising or sitting himself. The flushing arrangement should be suitable for him so that he can be trained to use the right pressure on the knob or the chain should be long enough for him to pull. In many Indian families, sanitation is inadequate and usually it may not be possible to have above arrangements for giving toilet training. In crowded cities, quite often the toilets are shared with other families and there are many homes without indoor plumbing. In such cases, it is worth-while to get a good potty chair or plastic potty with an easily removable container. Plastic chairs and plastic potties which are sold commercially must be tailored to the child's size. A little

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boy should notbe trained to urinate in a timbler, can or bottle because he lacks judgement of what is appropriate at any given time and this may lead to embarassment or seal difficulties as he grows older. It is better to change the arrangement sometimes i.e. sometimes he may be taken to the toilet and sometimes he may be seated on potty chair so that he may not build up the habit of being able to urinate or defecate only under one set of conditions.

In the beginning, it will be helpful to establish the habits of regularity. That is, he should be taken to toilet at regular intervals, like when he wakes up in the morning, before and after breakfast, mid-morning, before and after lunch, mid-afternoon, before and after dinner and before bed. Initially these 8-10 regular trips are enough and more frequent trips may result in tension for both parent and child after some time, the trips before or after each meal can be omitted as the mother would learn from her experience how frequently he should go to toilet. When he urinates in the toilet or has a bowel movement, praise him there and also in front of the family members for using the toilet at the proper times. Try using concrete rewards such as a candy, biscuit, sweeet etc. If your child cannot speak or walk to call you and indicate his need, get a small bell which he may ring when he wants to be taken to toilet. In order to associate the idea in the beginning, you may ring the bell and take him to the toilet immediately. Obviously, he will ring the bell in the beginning just to call you and when this happens, say politely, "No sweet baby. Ring the bell for the toilet only." Show him that reward is connected with the wanting to be taken to toilet only. As soon as he associates praise, approval and reward with toilet procedure, he is likely to attain this goal very quickly Donot punish, scold or threaten him for wetting or spoiling his pants.

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The toilet training should be kept free of other distractions because the attention span of the young child is short. Donot give him toys and teach him about bathing, dressing or undressing when he sits on the toilet seat or the potty chair,

The toilet should be used for the toilet activity so toileting outside is confusing to the child. Teachers and professionals come across retarded children who urinate or defefate in any public place, play-ground or even a bathroom because the parents have not trained them to use the right place for such a function. In that case it becomes very difficult for the teachers to teach the children and help them associate the place with the function.

So it is better to inculcate theright habit from the very beginning as it will remain with them throughout life.

Toilet training is although a slow process yet it is necessary th t the child should recognize before wetting his pants that he needs to go to the toilet. Initially the mother guesses and takes him to toilet but she usually helps him plan ahead and get to the right place himself.As he grows, he is so much interested in his play that he does not notice the sensation caused by a full bladder and so gets wet befoe he realises his need. It is of course irritating when a child tells you just after urinating instead of before but even telling about getting wet is an encouraging stage in his learning as it means that he has started realizing his responsibility. The next step in his learning is to recognize the need a little earlier. Mothers must expect individual differences even in the same family as far as le rning bladder control is concerned.

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The child should be praised when hehas a dry night and no criticisms or comments should be made on those mornings when he is wet.

The toilet training should be started when the weather iswarm and at that time it is easier to manage clothes as ther is no danger of getting colds resulting from wet clothes. When placed on the toilet seat, be sure that he feels safe, Give him a chance to sit on higher surfaces and hold his hand or shoulders or let him hold the handle bar.Leave him only a few seconds this time and let him get used to the toile

The parents usually complain about a common disorder in their children i.e. constipation which results in painful bowel movements. Your doctor may advise to take some medicine which may make the task less hard. A nutritionist or dietician may also suggest a change in child's diet. Generally all children do not have regular bowel movements and parents shoul not be over concerned on this account. Some retarded children cannot digest food because of lack of proper chewing. Over eating of food particularly cereals and pulses cause them frequent bowel movement. Such food items must be properly cooked and given in reasonable quantity which the child can easily digest.

Associate the use of toilet paper or water with the cleaning up process. Show him where the paper or water mug is. Show him how to tear off paper and how to fill the mug wit water and hold it. Guide his hand while wiping or cleaning. This is often neglected in the training and the mother tends to perform this action herself, thinking that the child will not be able to do it. Be sure to inculcate this habit at the right time and show him how to wash his hand after using the toilet.

(.....6)

It should never be assumed that the child cannot be toilet trained until he is quite old and remember that the more self-care skills he has the more socially acceptable he is going to be and the easier it will be for you to get him admitted to the special school. Remember the three Rs. for training him repetition, relaxation and routine. The most important point to remember about toilet training is that such body functions should not be associated in the child's mind as something disgusting, irritating or dirty and consequently embarrassment.

The following chart of toilet training with approx mental ages is given to you as a guide but is not to be considered to literally.

<u>Mental Age Guide For Toilet Training</u>

15 months	-	Regularity of bowel movements
18-21 months	-	Regularity of Urination
		Informs mother after wetting trousers
		May indicate need to change dress
2 Years	-	Day time control; occasional accidents
		Has to be taken to toilet at regular intervals
		Night control incomplete
		Tries to wash hands himself.
2-2½ Years	-	Asks to go to toilet
		Requires help for clothes
3-4 Years	-	Goes to toilet himself if clothing is simple.
		Needs help with wiping and cleaning
		Night control partially
4-5 Years	-	Washes and dries hands himself
		General independence including wiping, cleaning and clothes.

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PUPPETRY AND PUPPETRY FOR MENTALY HANDICAPPED

M. Srinivasa Rao, M.A., B.Ed.
Honorary Director,
Hyderabad Puppet Theatre,
H. No. 2-2-1153, New Nallakunta,
Hyderabad 500 044.

What is a Puppet ?

A puppet is a theatrical figure moved under human control. Puppets have a life of their own which depends upon both their design and operation.

Uses of Puppetry :

1. The puppetry is an effective media tool in any communication through which the child can learn the idea or moral with a lot of fun. This media is very interesting, attractive and relieves the child from the boredom and drudgery of the continuous process of teaching and learning. So the art of puppetry can be rightly used in teaching and learning process provided it is planned properly.

2. Puppets will stand upto any amount of hard use and are most valuable for encouraging free work and expression especially among the children who may feel shy about performing in the exposed conditions of an ordinary play. For the young child, play provides a major vehicle for his behavioural and psychological growth.

3. Puppetry is a means for the child to learn about the world of objects and people in relation to himself and his own actions.

4. It offers great opportunities for emotional release and many avenues for the exploration of feelings and emotions. It is extremely useful when used with the mentally handicapped children.

5. Puppets can also be made with waste material such as old clothes, pegs, paper bags, socks, paper plates, etc. They need not be sewn but can be made from single pieces of cloth, stapled or glued together. They need not be loosely joined. They are attached just above the knees, the wrists and at each side of the head. Puppets and marionettes are easier to make than masks and therefore more suitable for younger and less able children.

Some important points and factors to be considered in making puppets are :

1. Scales :

The average size of the pupet will be of one-third of human scale, the puppet designer should have some knowledge of human and animal proportions, but he should not be united by them and because of unrealistic scale relationships are often powerful or humorous on the puppet show. Puppets with heads one-third the size of their body are sometimes appropriate. Lion puppet small and rat big create humour.

2. Essential qualities of Puppets:

Most important factor in puppet design is simplicity, its emphasis is on essential quality. Once the essential quality of a character is expressed, further details should be omitted for they only impede.

3. Sources for Puppet Design:

Study the basic design qualities of face and figure. Remember that the puppets face is a mark, its expression must be integral. Boldness in the modelling or carving plus simple accents of colour, will give character even to figures seen from a distance. The puppet design should be semi-realistic, stylized or fantastic. Anything you can imagine, if it is well designed, constructed and manipulated can be effective.

SHADOW PUPPETS

Shadow puppet depends upon their mass for their effectiveness. Almost any figure, side or front view, which is quickly identified, clear-cut outline, can be adopted to a shadow puppet, if a smooth jointing system can be worked out. Make line drawings of figures. Brush and ink on white paper are good or try free hand cutting from card-board for preliminary experiments.

List of materials:

Tracing paper, black card-board (cover paper), thin sheet plastic, coloured cellophane, wire shanks, woven fish line, umbrella ribs or wire, coloured construction paper, boiled linseed oil, and terpentine, transparent paints (oil or water colour) and brushes, paste or glue, plastic solvent, scissors, pins, stencil knife, small ticket punch, pencil and drawing paper, leather, etc. is used for shadow puppets.

Basic types of Construction:

1. Shadow Puppets
2. Hand - Puppets (Glove Puppets)
3. Rod - Puppets
4. Marionettes (String - Puppets)

Shadow Puppets :

Are flat figures operated by rods or wires against a transtient screen illuminated from behind and board cul-outs, mounted on a stick. For more elaborated figures, coloured sheet, plastic or card-board, combined with coloured paper can be used.

Hand-Puppets:
(Known as first glove puppets) are worked on this operator's thumb and little (or third) finger move the puppet hands, his fore-fingers - the head.

Hand and rod puppets:

Are development of hand puppets. Rod puppets are supported on a wooden or metal rod. Head and hands are controlled by lighter rods. Strings are sometimes used for additional control. These puppets may be of any size which can be adequately supported.

Marionettes:
Are string - Controlled Puppets which are worked from over head.

Play Writing:
Play writing is an important factor in puppetry. The script must be suitable for puppet plays. Songs composed with music may be included wherever necessary. Dialogues must be short, clear and precise and the movement and expression of puppets may be more in order to create impact in the audience. In case the pupeteer is not a script writer, it may be got written by a good writer. The script may be original or adaptation from any other story. It would be appreciated by all if it is not only for just entertainment but also conveys any good message to them.

Important Factors in Performance:
(1) Director, (2) Manipulating and speaking for the Puppets, (3) Arranging and supervising the music, (4) Lighting.

Puppet Manipulation:
When the Puppet talks, a slight accenting movement should be given to head or hand or sometimes the whole figure in tune with the speech. This synchronization is a first principle.

It creates when done finally, the illusion of speech coming from the Puppet. Restraint is important.

Business: Booking, making of posters, hand bills, programmes, writing articles for the press and radio, taking photographs of puppets and puppeteers for Newspapers and records, advertising and publicity, ticket selling.

Types of Production :

1. Technical, 2. Dramatic, 3. Business

What is a good Puppet show :

(a) A good script written for puppets
(b) Puppets, scenery and constumes well designed and executed
(c) Carefully planned and effective lighting
(d) Skillful operators with trained voices
(e) Sufficient and efficient stage equipment
(f) Adequate time for rehearsals
(g) A Director with a sense of showmanship, who is able to tie all these elements together.

Puppeteers possess a kingdom of their own in which animals and even inanimate objects speak, think and act like human beings but with far greater charm.

There is yet to know many things such as lighting, recording, assembling and working out stage, decorating front curtain, scenery to be selected, selecting recorded music that are useful in the production of puppet plays.

PUPPETRY FOR MENTALLY HANDICAPPED PEOPLE

Creativity and Communication :

Creativity is a fact of life. It is an essential part of human existence. Do mentally handicapped people possess this quality ? Yes. But it may vary in degree. Every living being wants to communicate all about his life to his fellow being by a word or gesture. Life is what happens when you are being creative. One act stimulates the next. Twin ideas of creativity and communication are inseparable, which is interesting.

The puppeteer speaks out and tells others through the puppet what has been going on in her life, on the drawing board, in the work room. Not every puppeteer is a deep thinker, but every puppeteer thinks and says and does. In fact, she never stops thinking and saying and doing and the puppetry you see is evidence of it.

Does a Mentally Handicapped Person do these things ?

Our expectations of mentally handicapped people are sometimes very low, so we exclude them from experiences. In doing so, we deprive them of the extra care and stimulation they might need to spark of each precious creative impulse. We must know about creating expectations, and about the excitement of mutual response through puppetry.

Everyone a Potentiality Bank:

Expect the most and you will get the best, expect nothing and you will get little. If you work thinking that a mentally handicapped person is as much a potentiality bank as the so-called normal person, then much can be achieved. Expect a mentally handicapped person to have thoughts which can be expressed because he is a creative being. First we must be prepared to look for this potential for communication; second there must be people to hear, help and care for the person.

Stimulation must come from the other side. Imagine that there is a world in which no one ever listened, to anyone else, or cared what was being said ever. In every walk of life, we are dealing with human potential to create, to communicate and to form relationships. Without those expectations life itself becomes absurd and meaningless.

"Puppetry is a healing activity as well as an educational one"

Attitudes of mentally handicapped persons should be carefully thought out. Do not have a low view of life itself or believe there is for some people "a life not worth living". Allow them to avail themselves of their own creativity. Treat people as human beings. Puppetry is an important area of self expression. Artists working in this area should know:

1. The community
2. About the media
3. The real issues of today
4. About drama and the theatre
5. About Puppetry

Peppetry, if used meaningfully, it will be distinguished by its relevance, by its power and by its sheer appropriateness as a means for a mentally handicapped person to express himself.

Using puppet as a visual aid is alright under some circumstances. It would be as mindless as playing a violin for arm exercises. A Puppeteer produces a puppet and then

performs with it, ultimately the reason for her work is to bring her into contact with others and to share. Without that objective there would be no sense to the preparation.

Puppetry is flexible and sociably, offering great scope to people who may have a chance of developing expertise only in one very small area. Puppet show helps to cause something, to make something happen, these could be new experiences provided by presenting performance.

Achievement can come only through personal activity. Teaching can lead a handicapped person to say things about his life and feelings through the medium of puppets, and not simply to make correct movements with them.

Identifying with the Puppet :

A Puppet should have vividly designed features - particularly facial details. In the early stages it is useful to present your group with finished characters as it is not appropriate for many handicapped people to make their own puppets. A severely handicapped people will not be able to identify them but continue to see them as bits and pieces, unconnected components, not as a whole. A figure with a face will encourage a person in what is expected of him. Essentially what you are doing is helping someone to say:

1. The puppet is alive like me.
2. He has a face and I have a face too.
3. He moves, I move too.

The task of the teacher is to develop imaginative capacities of the students by simply encouraging them to recognise an object and to imagine it is alive, relating themselves and their bodies to the puppet, to lend their human qualities to the puppet.

Use the following statements :

The puppet has eyes like me, can
look, what has he seen ?
He can see like me.
He can move like me.
Where is he going ?
He can jump like me.
How high he can jump ?
Upto the ceiling.

Identifying puppets' body with that of students' body. Encouraging the students to look, to touch and perhaps to talk about it.

Some people are unable to put themselves into an imaginary situation, if their image of themselves is at all fragmented and insecure.

a) A good face on the puppet (not a bundle of Rags on the Stick) helps the students to understand that just as he himself can do things in real life, so this little puppet character can too.

b) He has control of this puppet and he is master of the puppet. Through his control, he can give it life.

It is not enough if you present a good puppet before the student. He should know the preparation for, and structuring of a session.

TOOTHACHE: A STORY

Gregory and Granny one day ate a lot of sugar and spice. Gregory was so full that he wanted to sleep without cleaning his teeth. Then a horrible bacteria grew in his mouth. He began nibbling and grawing at his teeth. He had a toothache. Granny chased them away with a special tooth brush. Gregory always remembered to clean his teeth after that. Puppets are a means through which the person speaks.

Develop mentally handicapped person in his creative thinking

Then we need a check list.

Assessment Check List :

1. Relationship between puppet and puppeteer - Is there a relationship, and how does it work ?

2. The way the manipulator is prepared to fulfil his obligations to use the puppet to show to others (Puppetry as a performing art): Is he sharing the experience ?

3. The way he rises to the expectations of others as they show the desire to see him play (social relationship with audience). How is he communicating with others ?

4. The use of the puppet to extend his social repertoire; communication; intellectual content; expression of feelings; making moral choices.

5. The appropriateness of his actions with the puppet (dramatic consistence of his presentation of the puppet character).

6. Sensitivity to the situation (to the current audience response).

PLAN THE SESSIONS STEP BY STEP :

For eg: Tooth ache :

1. What do the group know about teeth and their care ? - effect of sugar on teeth - about bacteria. They have to have some grasp of the relevant information.

2. Facts have to be related to the imagery in the story that is to the puppets.

3. Are teeth cleaning, toothache and visits to the Dentist within the experience of each group member

   Ideas grow out of knowledge and experience.

PLUS CURRICULUM

Dr. S.K.Goel,
RCE, Bhubaneswar.

The curriculum of the visually impaired child is just the same as that of the normal child, but access to stimulated learning is different because of the restrictions imposed by blindness. The mode of inputs and outputs are changed. He has to depend on the senses other than the sight. As in the case of the normal child, he has also to learn through listening, reading and writing. He has to study mathematics, social studies, science, languages and other co-curricular subjects. To cope up with the handicap, the visually impaired child needs something more than his sighted peers. He has to learn certain additional skills which are peculiar to his blindness and this is termed as plus curriculum.

Besides the parents, the teacher has to play an important role. As he is not emotionally involved with the visually impaired child he can be more rational. He has been trained to teach the visually impaired child.

The teacher of visually impaired children has to cover the following areas :-

a) Use of low vision and low vision aids

b) Communication skills

c) Basic Orientation and Mobility skills

d) Special methods for concept development through various methods.

e) Prevocational skills.

1. Use of low vision aids:

The teacher should identify the students having residual vision. The exact amount of functional vision for each individual student is to be asserted.

The visually impaired child should be encouraged to utilize his vision, however meagre it may be, the visually impaired child should be motivated to use magnifying glasses. In short, no opportunity should be lost in using the residual vision.

2. Listening:

Listening is one of the most important skills to be developed by the visually impaired child. Distinguishing and discriminating meaningful sounds from subordinate noises is very important. The teacher has to develop this skill though a very careful planning. Listening is one of the important skill in effective orientation and mobility. During the course of education the visually impaired child depends more on recorded material than on brailled material. Talking book library and readers' service are important services for both congenital and newly blinded individuals - N.I.V.H. (Dehradun), N.A.B. (Bombay), B.M.A. (Ahemedabad), B.R.A (Delhi) etc. provide such services to the visually impaired.

3. Braille Code and its formats:

The teacher should have the knowledge of "Bharat Braille" or its adapation in any state language. He should also know "standard english braille, grade II". He should be able to prepare brailled material as and when needed. He should also know the braille code for mathematics, braille notations for science and music.

4. Tactual discrimination skills:

Tactual materials are natural learning modalities for visually impaired children. In the books for the sighted children, alongwith the printed matter pictures

diagrams, charts and graphs are given. In braille books they are omitted. The visually impaired children should not be denied of these. Embossed maps, three dimensional aids, relief maps, adopted mathematical equipments, raised line drawing are some of the few things to be used by them. The teacher should be able to produce and/or procure the same whenever and whereeveravailable.

5. Special O & M Skills:

The most important skill in plus curriculum is O & M skill. Generally a specialist views this aim. But as a teacher of the visually impaired children, we need to develop some. The children are to be oriented within the class room and in and around the school building. We have to guide them inthe school building. We have to guide them inthe school compound and on the playground. Often we have to take them out for excursion. The teacher should learn to give special descriptions in terms of direction, faces, turns, slopes, ups and downs etc, in locating places or objects. He should have the capacity to translate visual maps or objects in to verbal description.

6. Social Skills:

Visually impaired individual can not make use of visual clues and body language: He can't visualize facial expressions, they should be told to them. They should be trained in personal grooming, socially accepted responses, etc. A human being acquires social skills throughout his life. The teacher can teach these skills

easily which should be spread over throughout the period of schooling. A feedback should be a major aspect for alrounddevelopment of a visually impaired child. He should be informed about the social situation and should be told what is expected from him.

They should be helped in managing their affairs and handling their special equipments. The use of writing slate, taylor board, abacus, other geometrical devices, braille writer, tape recorder and even normal type writer together with other electrical equipments that are normally used in our home should be taught to them.

TEACHING OF READING AND WRITING OF BRAILLE:

A sighted child starts learning about himself in relation to his environment as soon as he is born. But a blind child learns by touching the materials around him.

Braille method of reading and writing was invented by Louis Braille. It is a tactile approach for visually impaired. It is nothing but the combination of raised dots in a cell. The cell consists of six dots which can be arranged in 63 combinations. The dots are arranged in a cell in two vertical lines and each line contains 3 dots. The braille system is classified as Grade I, Grade II, and Grade III levels.

In grade I, each letter of the braille word is specified. Grade I braille will be sufficient for those who do not have extensive reading in braille. It is just like primary level teaching.

In grade II, there is contraction. It is a normal form of reading braille. The braille books prescribed for school children usually contains Grade II contraction.

Grade III, system is the complicated form of the Grade II braille. It is a form of a "short hand system". It is difficult to understand on the part of a ordinary braille reader.

Braille Reading:

It is not difficult to read braille on the part of a reader if he is properly trained. For the beginners, it starts from six board, then peg board and then reading braille chart. The finger tips possess sensitive nerve endings which make touch reading possible. The light pressure onthe raised dots gives the necessary information regarding position of the dots. To discriminate the position of the dots in a cell under one finger is difficult for the beginners. It needs extensive reading. For effective braille reading, a proper braille mechanism needs to be developed.

Using both forefingers for braille reading is universally recommended for a beginner. Lightness of touch of dots are encouraged but movement of finger tips up and down is discouraged. Left hand should follow the right hand and move through the line.

Some children develop reading in different ways. Some use only the fore finger of the right hand for reading. Some use two forefingers keeping distance. Some place three or more fingers on the braille words. Some use fingers curving on the line while reading.

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The visually impaired child after learning the position of the different dots of a cell should be given words to which he is familiar. The word may be the child's name. The words can be brailled and the child be asked to keep the fingers onthe words and explore the words. The teacher should inform the child that the word represents his name. This gives him a familiarity with the spoken word and encourage the child to read more new words. After the child is well acquainted with words he should be given small sentences.

Braille Writing:

Usually visually handicapped children are used to write in slate which consists of a wooden or plastic frame a guide and by help of stylus they braille onthe paper. While writing, the child has to punch the dots from the right to the left side of the slate. After writing, the child should reverse the paper and read it from left to write. Before writing, the child has to practice on the slate, the art of punchingsix dots in one cell. This practice is very important for the beginners. This encourages the child to punch the dots properly and the child feels confident. In order to write braille effectively, the child should possess the following skills.

1. Finger manipulation skills.
2. Fine motor co-ordination and control of muscles.
3. Competence to read familiar braille words.

In teaching braille writing, the easiest formation should be taught first. The child should be taught to write letters a, b, c, d, etc. with dot numbers. To

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develop speed in writing the left hand should always identify the braille cell while the right hand punches the letter in the previous cell. The stylus and the left hand should be placed on consecutive cells. By this the left hand assists the right hand which holds the stylus to identify the correct dot in the braille cell. While writing, the stylus should be held vertically.

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EDUCATIONAL INNOVATIONS FOR THE VISUALLY HANDICAPPED IN A TECHNOLOGICAL ERA

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Dr. Sushil Kumar Goel,
Reader in Special Education,
Regional College of Education,
Bhubaneswar-751007(Orissa).

ACCESS TO INFORMATION

A person receives about 80% information through his sense of sight. Loss of sight is a severe handicap. In education, it affects the majority of activities associated with learning both in or out of the classroom. A visually handicapped person has to rely on the enhanced use of auditory and tactile modes of communication to ensure that the widest possible curriculum is available, but many learning problems still remain.

Right to obtain information through all accessible channels is one of the recognised fundamental rights of all blind persons, as indeed of all citizens. In the age of science and technology, the fresh information is being generated at an exponential rate and it has become extremely difficult to face the information explosion. In order that a visually handicapped person should enjoy full participation and equality in every aspect of his life, it is imperative that information should be communicated in the form accessible to him.

Braille is established as an important communication medium for blind persons, but there are serious problems in producing it to meet all of the demands for study material. This is also true of tactile diagrams which are very necessary in science and mathematics.

Communication problems are highlighted in the integrated schools and in higher education where blind students are required to submit scripts for teachers who may have little or no knowledge of braille. Public examinations too present similar type of problems.

Recent developments in technology create the most promising possibilities for solving the problems of visually handicapped. In drawing together experiences of new technology among visually handicapped people, we refer to developments particularly in the areas of reading and writing, and the more recent problem of keeping abreast of the use of computers in education. The widespread use of computers in schools is likely to change teaching methods and to introduce new teaching materials, visually handicapped children could be further in a disadvantageous position. Since the design of systems is dominated by visual output, access to computers by blind people raises the question, how ? Fortunately, the inherent problem of using computers that are designed to produce visual output is being overcome by alternative tactile or audio outputs.

TECHNOLOGICAL INNOVATIONS IN FOREIGN COUNTRIES

Information Technology has already made many contributions to the education of the visually handicapped students. Many devices now exist which give access to printed material and help to overcome the enormous task of producing braille in sufficient quantity to meet the demand for reading material.

Information can be accessible to them in tactile form through Braille printing, embossed literature, Braille teaching aid, three-dimensional 'touch and tell' exhibits, tactile image generator, optacon, etc. The partially-sighted can have access to information in visual form through low vision and magnification aids, closed circuit television, large print material, etc. Auditory form is the most important means to have access to information through talking books, talking computers, talking word processors, stereo cassette recorders, wireless, T.V. for blind, Kurzweil Reading Machine etc. Voice Indexing Device will allow random access to the pages of a talking book.

Modern Electronic devices like Braille on magnetic cassette, Microbrailler, Digicassette, Sony Typerecorder, Braillex, Viewscan Text System etc. have been developed to provide effective communication media to the visually impaired. Developments in Information Technology like Online Computerised Databanks, British Aids Database, Technical Aids, Information Systems, Online Rehabilitation Database etc. have given a

boost to visually impaired. A synthetic speech output for the blind has been developed whereby a microcomputer can speak to its operator, avoiding the need to translate printed information into braille.

These devices are fascinating, futiristic and extremely useful but prohibitive in cost atleast for the blind individuals in this country. Even if import duty is waived, the vast majority of the disabled in our country living in desparate poverty cannot just afford the luxury of such sophisticated aids. It is, therefore, necessary to develop aids and appliances indigenously and from locally available material at low costs. Electronics have made great strides in India and plenty of electronic devices are available. If adopted to suit the disabled, they could greatly help them in their daily activities. India has a well organised electronics industry. It is essential to mobilise the interest of this industry so as to produce aids and appliances useful for the education of the visually handicapped.

PROGRESS IN INDIA

Educational opportunities for the blind have existed in this country for almost a century. The first school for the blind was set up at Amritsar in 1887 followed by 3 more schools before the turn of the century. Today, India has around 250 institutions for the blind with an enrolment of somewhere between 15 to 20 thousand children and adults. The magnitude of blind population is so high that expansion

of educational opportunities for the blind either in special schools or integrated schools without adequate technical aids is inconceivable. Thus many blind and partially sighted persons have to exist without any aids either because they cannot afford any or they donot know where to obtain them from.

The Centre for Biomedical Engineering at the Indian Institute of Technology, New Delhi was awarded a research project by the Department of Science and Technology to do a technological assessment of rehabilitation aids for the disabled in India. Mohan & Kothiyal (1984) compiled a "Guide to Aids and Appliances for the Visually Disabled" in January, 1984. In Section-I of this guide, there are 162 product entries under the following heads. Braille Duplication and Writers; Writing Aids; Braille Paper; Talking Books and Tape Recorders; Mobility; Low Vision Aids; Optical Aids; Educational Aids (Mathematical/Geography); Teaching Aids; Intelligence Tests; Vocational Aids; Measurement; Clocks and Watches; Games and Puzzles, Sports; Kitchen Equipment; and Personal Devices. At the end of this section, a list of 40 manufacturers has been provided in alphabetical order. Information on aids available outside India was compiled from literature available in English language and this is presented in Section-II under the following heads: Low Vision Aids: Mobility Aids; Training and Vocational Aids; Educational Aids; Games, Sports and Recreation Aids; and Self Help/Personal Aids. Recently the National Rehabilitation Engineering Institute (NREI) has

prepared a catalogue of aids and appliances for the blind. The NRSI was set up by the Blind Men's Association, Ahmedabad as a premier centre for manufacture and supply of almost all imaginable and newly developed aids, appliances and rehabilitation tools for the blind and orthopaedically handicapped. Datrange and Mokkapati (1986) have compiled an 'Indian Guide to Aids and Appliances for the Blind', there are 151 product entries in the guide and the criterion for selection of a product is its availability in India and not the country of origin. National Institute for the Visually Handicapped (NIVH), Dehradun has also compiled an "Illustrated catalogue of Aids and Appliances" in the year 1988. Punani & Rawal (1993) have compiled a large number of aids and appliances for the visually handicapped alongwith brief description and the addresses of their availability.

For effective educational programmes any school requires trained teachers and suitable equipments to promote learning. Joshi (1981) conducted a study with the following objectives. (a) to obtain information about the status of Indian educational institutions for the blind pertaining to special aids and appliances; and (b) to provide information about commonly used and available educational aids for the blind. Goel (1985, 1986, 1987) discussed the communication media and information technology in developing sophisticated aids for the blind and also the possibility of its utilisation in the Indian context. In striving to teach science and mathematics

most effectively to blind students at the minimum cost, Bhat (1982) suggests three criteria to follow for designing equipment and experiments: they must be multipurpose, creative and simple.

Tremendous progress has taken place in the development of educational aids in the West. With the help of science and technology very sophisticated and facinating aids have been developed recently, to minimise the limitations of blindness. We, in India, have not as yet even reached the stage of providing basic educational aids to our children. We cannot wait for decades to get highly sophisticated electronic aids. The author stresses the importance and urgency of providing the very basic aids and equipment and would like the scientists and technologists to come to our help in developing educational aids and other basic necessary items required every day in the classroom settings.

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PHYSICAL EDUCATION AND GAMES FOR THE VISUALLY HANDICAPPED

Dr.Sushil Kumar Goel,
Reader in Special Education,
Regional College of Education,
(NCERT),Bhubaneswar-751007.

Back Ground :

The blind people are handicapped with feebleness, awkwardness and helplessness, in addition to blindness. The vitality of the blind is much below the average vitality of the sighted and any system of education which does not recognise and try to over come that defect will be a failure. Even if a blind person is an accomplished scholar, a good musician, a skilled mechanic; no employer would apoint him if he is timid, awkward and helpless? Without confidence, courage and determination to go about freely in the world there is no chance of success for a blind person and that confidence and courage are given by the playground and gymnasium. Children with impaired vision have the same needs for physical activities as others. But the fact that they are unable to see normally does restrict their play activity to such an extent that they are noticeably retarded in their physical development. Inactivity can result in poor neuromuscular coordination and endurance posture may be poor because of lack of strength of postural muscles. Failure to participate in physical education programme contributes to the tendency to withdraw from society. Helen Keller must have had some of these things in mind when she said, "The curse of the blind is not blindness but idleness". Because the urges of a blind child to move and play are frustrated he often develops certain mannerisms, known as blindisms. These are physical movements through which he seeks to fulfil the need for muscular

movement without moving about through space. Rocking back and forth, twitching of the head and jerking of the limbs are characteristics of blindisms. It is desirable to overcome these mannerisms. The aim of the special physical education programme is to help the student to achieve optimum physical, mental and social growth through a carefully planned programme of selected physical activities. To accomplish it the following <u>objectives</u> are set forth:-

a) Develop optimum physical fitness

b) Develop skills in the basic motor movements.

c) Develop a variety of sports skill for participation in sports as a worthy leisure time activity.

d) Develop a desire for continuous physical improvement.

e) Improve body image kinesthetic sense.

f) Promote an understanding in the student of the nature of his handicap and its limitation while emphasising the potentialities which may be developed.

g) Give a student a feeling of value and worth as an individual regardless of his handicap.

Physical education is today accepted as an essential part of education and has an important role to play in the welfare of the blind. There is lot of confusion in interpreting what physical education is and what its programme should be. Since most of the institutions are under private management, their financial resources are limited and only the very minimum of facilities are provided. Even schools with reasonable financial resources find it difficult to get open play grounds if they are situated in a city. A spacious playground

is an essential part of a school, for no satisfactory programme of physical education can ever be carried out without outdoor space. The ground shall be well laid out with various areas planned for promoting variety of activities. As a safety precaution the play area should be free of non-essential equipment and unnecessary obstructions. For outdoor playing fields, hedges and shady tree are considered desirable boundaries rather than walls or fences which present a certain element of danger. Boundaries for games can be indicated by the in bound area composed of concrete and outbound area of sand or grass. Players will then be able to tell by foot sensitivity when they step out of bounds. To guide blind for outside running events, wires can be placed along the path of the runner to guide him. The runner will have some sort of warning at the finish line; a sort of auditory signal such as a whistle may be sounded. Very few schools possess a Gymnasium worth the name. Every school should possess a Gymnasium so that physical education programme can be conducted regularly throughout the year without being interfered by monsoon. Further certain activities are better adopted for indoor conditions. Apparatus is fixed under shady trees with the ground well levelled. It is not confortable to use them when the sun is strong. Lack of playgrounds naturally leads to inadequate equipment. It is also due to the non-availability of certain types of equipment which are not manufactured in India. The balls to be used by the blind should be larger in size and softer and they should be painted white or yellow to make them

more easily seen by those with some vision. Bells or rattles inside the balls help to indicate location to the blind. One reason why ball games are not promoted in Indian schools for the blind is the non-availability of balls. The special balls like sound balls or bell balls are not easily available in India.

Game for Blind :

In some of the Institutions in India, the following games are available: (a) Playing cards, (b) Chess, (c) Cricket Ball, (d) Draghts Board, (e) Chinese Checker, (f) Puzzles, etc. The games are mainly indoor games and their adaptation for the use of the blind is easy. Both the blind and the sighted can play together the games like chess and cards which provide recreation as well as contact with people. Recently the Western world has started popularising sports like swimming, ball games, track and field events and wrestling. Regular sports help in rehabilitation and integration and are significant for the mobility of the blind. In India, cricket is becoming popular among the blind boys. The institutions should welcome their efforts and try to encourage them further for other suitable steps.

Nearly all the varieties of activities offered to normal children can be presented to blind children. Some require more adaptation than the others but the blind children enjoy and need participation in the same games, sports and physical activities. Dancing has value for the development of rhythm, timing and coordination

and as a means of expression through movement. Swimming is high in recreational and safety values and is one of the best forms of total experience. Wrestling offers an unusual outlet for all-out performance of strength, speed, ability and endurance. Developmental and corrective exercises are of particular value because they provide a safe kind of vigorous activity in which improvement of body mechanisms and the development of strength, endurance and agility are readily available.

Physical Education Programme in a school can be divided into two parts: (a) Instruction period - Physical education within the time table & (b) Participation period-Physical education outside the time table.

(a) Instruction period is used to teach the activities as prescribed in the syllabus. Physical education classes are included in the time table. Usually, two/three periods a week are allotted for lower classes and only one/two periods a week are allotted for higher classes.

(b) Participation period is usually after the regular classes. During this period students join in various activities at their option. During such participation they play games of their choice and get coaching for developing higher skills. To provide practically every student to participate in competitions a good intramural programme should be organised. There is some difference of opinion regarding participation by the blind in interscholastic athletics. There is no substantial evidence to indicate whether the values

or evils which appear in the competitive sports programme for normal youngsters are greater or lesser for blind players. It would seeem desirable to provide the same opportunities for blind students. Competition may present a difficult problem as there will be few blind schools near enough to make travel feasible. Competition with regular schools in certain events can be conducted satisfactorily.

Physical education is a specialized field with its own techniques and levels. For the best results, it is therefore important that the teachers of physical education are appropriately trained. Qualified physical education teachers are available in some schools but they are not specially trained to teach the blind. In many schools class teachers who are good at games and, interested in games help in conducting play activities. Techniques of teaching may be defined as the special methods. The teacher uses to handle instructional problmes efficientlyand to deal effectively with the varied responses of different children. Teaching techniques and used by physical education teachers are of three general types, viz, verbalization, visualization and kinesthesis. Out of these only verbalization and kinesthesis can be used for the visually handicapped. Verbalization refers to the use of spoken word in the process of teaching. Describing a skill is an example of the use of this technique. The use of kinesthesis refers to the involvement of muscular activity in teaching learning situation. In a sense the adjustment a student makes when his muscular movements have not achieved satisfactory result is a phase of kinesthesis.

In view of the above it, therefore, becomes necessary to develop a special training programme to qualify a physical education teacher to teach physical education to blind children. Education and training is the manifestation of divinity and perfection which lie in human spirit and soul. Physical education is an education through physical activities for development of total personality of the individual to its fitness and perfection in body, mind and spirit. It has comonly been said that, "If wealth is lost, nothing is lost. If health is lost, something is lost. If character is lost, everything is lost". Physical education plays no less an important part than education in academic subject in the coordinated development of the personality of the child to make him a physically fit, mentally alert, emotionally sound and socially acceptable citizen. Physical education plays a vital role in modern life. Moral health depends on physical equilibrium. Physical education has an important influence on the development of personal character. It has helped to achieve physical, mental, social and moral qualities to develop the total personality of man, which is the ultimate aim of education. The aim of physical education is to provide skilled leadership, adequate facilities and ample time for affording maximum opportunities for individuals and groups to participate in situation that are physically wholesome, mentally stimulating and satisfying and socially sound. The aim of physical education is to maintain and improve health to loosen up and strengthen

the muscles, improve physical resistance and turn a child into an agile and lively being. This can be categorised as:

1) Conservation of physical and emotional health;

2) Development of body, leading to the harmonious development of all organs;

3) Inculcation of qualities of endurance, patience, self-control, courage, etc. and;

4) Development of regular habits of work and pay with due emphasis on intellectual, moral and physical development.

Physical education is universally considered as an integral part of education because it contributes to the attainment of fundamental process, co-ethical character, worthy borne membership and good citizenship. It is that phase of education which has to do with the development and training of the whole individual through physical activities. "Practice makes a man perfect" is true when only practice is done inthe proper style of execution. Execution of skill in the proper style is important for achieving higher performances and satisfactory results. One of the prime factors to enjoy is mastery of skills. Skill is defined as the ability to perform. Performance of right type of activities leads to the following <u>benefits</u>:-

1) The heart and blood vessels operate more efficiently. The heart is able to pump more blood per contraction, thus doing more work with less effort.

2) The respiratory system functions more efficiently. Exchange of carbon dioxide and oxygen takes place more rapidly and vital capacity is increased.

3) The work capacity of the muscular system is increased making for greater endurance.

4) The central nervous system is trained to coordinate other systems effectively. Finally the general health is improved by proper exercise. Then it increases the individual's zeal and alertness, making him a more vibrant, efficient being.

Physical education gives practical training to the blind to become a fully trained person to take his right place in society and often brings the blind and the sighted together. A blind person does not differ from a sighted person as far as his mental structure is concerned. Physical activity is the best way to prevent blind individuals from getting isolated and lonely. The blind should be encouraged to find their way to the sighted and ultimately the sighted may want to learn or know the events that are typical of the visually handicapped. Physical activities and exercises are of particular importance to the blind because their possibilities to move around are limited if we compare them with the sighted. If the limitations of the blind are taken into consideration, many physical exercises can be modified according to the needs of the blind. Pity and over-protection by the parents on account of lack of information have prevented many blind persons

from participating in physical activities. As a result, the large trunk muscles and vital organs will not develop. Safety precautions should be given importance. Environment must be familiar to the participants in physical activities. All equipment and apparatus must be checked carefully and they should be taught carefully how to use them. Another important factor is that participants should be well informed about the apparatus they are going to use. Continuous coordination between physical education and health care is a must. The physical educator must follow the advice of the physiotherapist and distician and the apply the exercises to the blind. The main objective of physical exercise and corrective therapy is physical restoration, and that's why physical education of the blind may be called "Physical rehabilitation of the blind".

Corrective Exercises:

Visually handicapped children can benefit from corrective exercises inposture, coordination, gait, etc. These children need to be engaged in elementary activities such as jumping from the bottom step of a flight, climbing stairs correctly, hopping, skipping, jumping upward and forward, running, etc. Without attaining mastery in these activities, the blind children may not be able to participate actively with more experienced sighted children of the same chronological age. These children then come to kindergarten or first grade at a lower level of readiness for physical education than their seeing peers. Since they can neither see themselves in mirrors nor they can see others to imitate, they need

to be given necessary activities and active play experiences - walking jumping, climbing, rolling, hopping, etc. - so common to young children to strengthen muscles and produce tone.

Day School Programmes:

In day school programmes, the classes are of large size and the physical education teachers may hesitate to include a visually handicapped child lest he be injured. The resource room teacher should work out a cooperative arrangement with physical education teachers and with regular classroom teachers. In order to provide physical education for the visually handicapped and yet not put the school at a disadvantage, a mobility teacher might serve here as physical education teacher. Thus he combines his training in physical education and special education. He may divide his pupils into two or three homogeneous groups and then include sighted children to provide healthy integration.

Residential Programmes:

In a residential programme, classes are small, although a given group of children has its range of abilities and heterogencity. Specialized equipment and adapted conditions make physical activity natural and pleasant. Rules of games and techniques of play can be modified - using a large ball instead of the standard size, rolling the ball instead of throwing it, using a guide wire in track events, etc. Teachers may have had some special education training in the area of the physically handicapped and be less fearful about active play for these children.

Physical Education and Recreation:

Physical education and recreation run in a parallel line rather than lying end to end. Physical education and recreation can be reasonably considered together because in actual living these two are not separable. Frequently physical education programmes fail, not because there are too few organized sports at school but rather because children, when not in school under the direction of the teacher or coach, either do not know how to use leisure time profitably or have no desire to be so engaged.

As far as family recreation is concerned; some activities, such as table games, reading, membership in clubs, spectator sports, etc. may be mentioned. Some of them are conducted singly, whereas others are best enjoyed in the company of friends, seeing or visually handicapped; Some pastimes are sedentary, while others are active and vigorous. Variety is the key to refreshing leisure - time pursuits.

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INTEGRATED EDUCATION OF THE VISUALLY HANDICAPPED

Dr. S.K.Goel,
Reader in Special Education,
Regional College of Education,
Bhubaneswar- 751 007

1. IED Programme

We do not have accurate data of blind and visually Impaired Persons in our country but on the basis of several community surveys there are about 9 million blind and 45 million visually impaired persons in India. Besides, about one million cases are added every year.

With this - high magnitude of visually handicapped population, lack of resources,
- limited number of special schools,
- financial constraints,
- shortage of trained manpower, etc., some alternative, strategy for education of VH children needs to be developed.

IED is one such alternative which is going to be very helpful in serving a large number of such children all over the country.

The Government of India initiated the scheme of IED in 1974 which was modified in 1981.

Hundred percent financial support from Central funds is available to all the States and Union Territories implementing this scheme.

The IED scheme is in operation in 14 States, including the Union Territory of Delhi. Most of the States/UTs implementing the scheme are still at the experimental stage. The programme is gaining momentum in pursuance of NPE 1986 which envisages education of disabled children in common Schools as far as possible. The programme has assumed further significance dueto the Nation's commitment to expedite universalization of elementary education in the seventh five year plan. The stage of implementation has been upper primary or secondary in most of the States/UTs. Pre-primary education is almost missing. Close interaction among the disabled and normal children in impressionable years promote understanding

and appreciation of the assets and limitations of each other. Pre-School Education is the first-stepping stone in the life of every child, sighted or blind. The NAB-Mata Lachmi Nursery is one institution which admits children between 2 to 5 and follows the normal montessori course. The integration should start from the family, through immediate community and School to the world of work.

To ensure the benefits of IED programme, the administrator, who is obviously the Principal of a School of normal children, must be a qualified person andwell versed with the problems of visually handicapped children. Also the teachers must have knowledge about the assets and limitations of VH children. It is with this objective Government of India is planning to start B.Ed. (Special Education) so as to enable the teachers to implement IED programme effectively.

The following broad criteria may be adopted by the administrator to run an effective IED programme.

2. ADMISSION OF VH CHILDREN

Before admitting any handicapped child, the administrator must ensure that the particular handicapped child has only one fiature of handicap and is not multiply handicapped. For instance if the child is blind, he should not have any additional handicap like deafness etc., Secondly, the administrator must ensure, that the IQ of the handicapped child is at par with his normal counterpart.

3. AVAILABILITY OF INSTRUCTIONAL MATERIAL

The administrator and regular teachers must ensure that all specialized instruments of gadgets will be provided for the educational needs of the VH child. For instance, availability of text books in the braille script, tapes & cassette recorder, raised maps and diagrams, special equipment for reading and writing, three-dimensional aids, etc., must be made available to the blind child so that he may keep pace with the normal peers.

4. AN EFFECTIVE RESOURCE ROOM PROGRAMME

Before supplying the equipment and instructional material to the handicapped child, a Resource Room Teacher must be made available to teach the handicapped child to use these aids and equipments. Apart from imparting educational instruction to the handicapped child, the RT must be in constant touch with his parents for periodic guidance and counselling.

5. Coordination between Regular Teachers and Resource Teacher.

The regular teacher and the resource teacher share responsibility jointly. The resource teacher not only helps these children to learn special skills but also helps regular teachers, administrators and parents in understanding the abilities and disabilities of these children.

6. TEACHING AND LEARNING

The basic function of the eye is to collect visual information from the environment and transmit it to the brain. Sighted children receive about 85 to 90% information through their eyes. This input is denied to the blind. Blind children use other senses-primarily their ears and sense of touch. Thus through braille reading and writing, special auditory training, orientation and mobility training, they are able to receive education alongwith sighted children and thereby gain the same social attitudes, the same information and develop the same level of confidence.

A. Academic Standards

The teacher must maintain the same academic standards for all children. The same outcome can be expected. Occasionally, a lesson may be modified or substituted. With very young children, when text materials are highly or exclusively visual, a rare lesson may be omitted. However, these problems diminish as the child progresses through early standards.

B. Knowledge of Braille

A regular teacher will not require to learn braille in order to effectively integrate a braille reader into his class. However, if he is interested in learning, the RT will be happy to share this skill with him informally or even formally.

C. Carefulness about the usage of words

Does the regular teacher have to be careful about certain words he uses in the class ? Absolutely not He can say, "Look at this", "Do you see what I mean" "Can't you see the meaning of that expression in the text ? etc. Be perfectly natural. A blind child is not a fragile thing, he must learn to interpret such expressions.

D. Usage of Special Techniques.

Does a regular classroom teacher use any special techniques in his teaching ? Probably not. One of the major responsibilities of the RT is to introduce complex concepts, unfamiliar page layouts, etc. in advan so that the blind child is prepared for regular teaching RT will ensure that the blind child is comprehending ful Some teachers place material on the blackboard without saying aloud simultaneously what they are writing, they find that blind child misses that information completely. A good teacher knows that a multisensory approach i.e. both writing on the board and saying what one is writing - is best to teach in integrated setting.

7. INTEGRATION AT THE SECONDARY LEVEL

Only academically bright students should be given the opportunity of integration at the secondary level.

Those students who have shown better skill in some trades other than academics, they should be given adequate opportunity to excel in their respective trade.

Unfortunately this is not being followed in our country. VH children with a mediocre academic performance are encouraged to go in for higher studies simply because scholarship to physically handicapped is available at a mere aggregate of 40% marks. As a result, such mediocre students get highly frustrated when they are unable to get gainful employment in the competitive world.

8. DEVELOPMENT OF PROGRAMME SUPPORT

The purpose of IED scheme must be explained to regular teachers, counsellors, social works, normal students, local and district supervisors and administrative personnel. The job of each person must be clearly understood. Successful integration can only develop when each person works in partnership.

9. IED PROGRAMMES IN THE RURAL AREAS

About 80% of blind children are living in rural areas. It is disheartening that all the IED programmes are available in urban areas. The handicapped have to leave their families and come to urban area. It is also disheartening that our trained personnel are not ready to serve in rural areas. Some package of incentives may encourage the RT to make IED programme a great success. The basic purpose of IED scheme is defeated if the handicapped have to leave their families and shift to urban areas for receiving educational facilities.

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Dr. U. N. Dash.

LEARNING DISABILITY

Learning disabled children consist of a special group of exceptional children. They are found nearly in every classroom. In U.S.A. Kephart noted that nearly 15% to 20% of the children who enter the first grade are unprepared for formal learning. Inspite of their average or near averageintelligence, they do not cope up with the demands of the school. These children are suspected to be learning disabled children.

Who are Learning Disabled ?

Many definitions of learning disability have appeared in the literature. There are two distinct approaches in defining and understanding learning disability. The first approach is cause-oriented and the second the effect-oriented. Those concerned with analysing, describing and modifying observed behaviours regardless of underlying causes.

Kirk (1962) gave an effect-oriented definition refering to learning disability as a delayed development in one or more ofthe processes of speech, language, reading, spelling, writing or arithmetic. The definition lists some observable characteristics of LD children. The school teacher can notice these characteristis in children and may initially screen them as LD.

National Advisory Committee on Handicapped children (U.S.A., 1968) defines learning disability as follows:

Learning disabled children show a disorder in one or more basic psychological processes involved in understanding or in using spoken or written languages. The disorders are manifested in listening, thinking, talking, reading, writing and arithmetic. They include conditions which have been referred to as perceptual handicaps, brain injury, nimimal brain dysfunction, dyslexia, developmental aphasia etc. Learning disability does not refer to problems which are primarily caused due to visual, hearing, or motor problems, mental retardation, emotional disturbance or environmental disadvantage.

The above definition is exhaustive and emphasizes 3 important points about LD.

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1. The principle of disparity : For LD children, there is a big dif'-rence between what he is capable ofdoing and what he actually does. The LD child has average or near average ability level. But his achievement in the school is very poor considering the level of his intellectual competence. His performance is depressed more in the verbal than the performance areas.

2. Basic disorders of learning progress: The LD child has disorders in auditory, visual, tactile, motoric, and vocal processes. The basic processes are impaired in at least 3 ways : (i) A process which has been acquired by him is lost, (ii) the development of a process is inhibited (iii) even if the process isacquired, there is a lot of interference at the time of execution.

3. Exclusio. of certain groups from LD : If the children perform p orly in school because they are mentally retarded, because they suffer from educational and cultural deprivation severe emotional disturbance, or sensory deficit, they will not be cons d ed as LD children.

At the primary school level the problems of the LD child is observable in the areas of listening, speaking, reading, writing and arithmetic. In the communication model, the skills of listening and reading are described as decoding functions where as spelling and writing are seen as encoding functions. The model given below describes the relationship among four elements of language.

Input or Receptive Skills		Output or Expressive Skills
LISTENING READING	Intergrative Process	SPEAKING WRITING
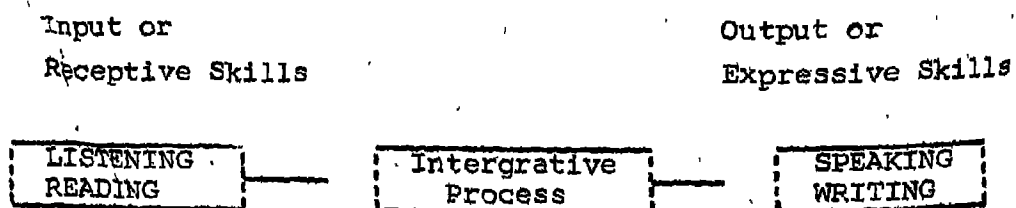
Figure 1 : Relationship of the 4 elements of language.

The acquisition of these 4 basic components of language form a hierarchy. A firm foundation is required at each level before the next skill can be added or integrated.

ORAL LANGUAGE SKILLS of listening and speaking are acquired first, they are referred to as PRIMARY LANGUAGE SYSTEM. Reading and writing are referred to as SECONDARY LANGUAGE SYSTEM. The hierachical model of development of these skills is given below:

REFINEMENT of language usage
comes last

WRITING follows as a means of
self expression (Expressive Written
language)

READING comes next with normal child
(Receptive written language)

SPEAKING develops early in life
(Expressive Oral language)

LISTENING is the first step toward maturity
(Receptive Oral language)

EXPERIENCE is foundation for our language dev.
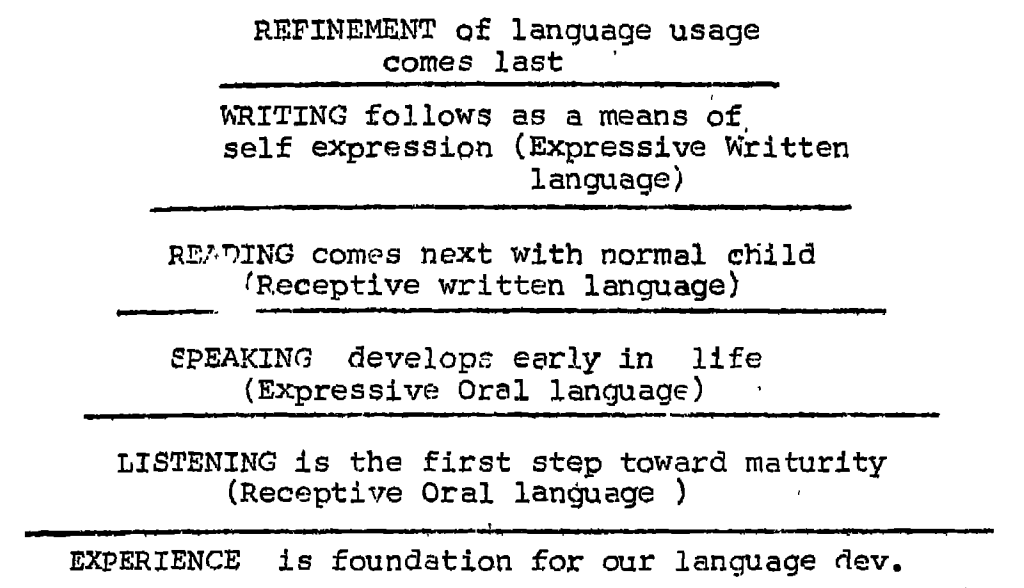
Figure 2 : Development of the relationship of the elements of language art-

Language deficiency [illegible] ne form or another is the basis for many learning disabilities. The child may face problems in the areas of Oral language, written language and arithmetic.

In the [illegible]ea of ORAL LANGUAGE (listening and Speaking) the child may [illegible]ce the following :

a) poor ability to follow directions and instructions.

b) Delayed speech development.

c) improper use of grammar or syntax while communicating ideas.

d) poor memory for orally gain information.

e) poor comprehension of word meanings or poor vocabulary.

f) poor auditory discrimination, unable to discriminate between various speech sounds.

g) poor comprehension of classroom discussion.

In the area of WRITTEN LANGUAGE (Reading and Writing) the child may exhibit the following problems:

a) Faulty sound blending and improper word recognition.

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b) poor sound-letter association. Bad pronounciation and punctuation while reading.

c) Poor short-term memory for letters and words and consequently poor spelling.

d) Letter and word reversals ('b' for 'd', 'p' for 'q', 'tub' for 'but' etc.).

e) poor visual figure-ground discrimination for letters and words.

f) poor understanding of prepositions, conjunctions and written expressions.

g) Bad handwriting, omission of letters, words while taking dictation.

h) Bad reading, omission of letters, words, sentences while reading, modifying the form of words, intrusion of new words etc.

The learning disabled children frequently encounter problems in solving arithmetic problems. At the primary school level arithmetic problems depend heavily on reading and understanding the arithmetic questions. Hence, language skills besides reasoning, generalizations and abstraction skill influence child's ability to solve arithmetic problems. Because of poor language comprehension and numerical reasoning the LD child faces following problems while solving arithmetic problems.

1. Difficulty in understanding the arithmetic questions.
2. Difficulty in discriminating between the relevantand irrelevant aspects of the problem.
3. Short attention span (child faces difficulty in retaining the relevant information).
4. Poor discrimination between different shapes, sizes and quantities.
5. Poor understanding of One-to-One correspondences, and seriation.
6. Poor number sence.(Difficulty in counting, comparison of numbers.
7. Poor spatial-orientation(difficulty in understanding up-down, over-under, top-bottom, high-low, near-far,front-back, beginning-end etc.)
8. Difficulties in visual perception and visual-motor association counting, seeing objects in groups or sets, perceiving the geometric shape, writing numbers, coping letters etc.)
9. Poor computational skills(addition, substraction, multiplication and division).
10. Poor conservation skills in time, number, mass, weight, distance, area etc.

(conservation is ability to quantities of objects do not change because of different spatial arrangement)

Dr. U. N. Dash
Reader,
Deptt. of Psychology.

CHARACTERISTICS OF LD CHILDREN

The following characteristics of LD children are mentioned most frequently:

1. ABILITY LEVEL :

The average, near-average or above-average in their general competence level. But they do not profit from regular classroom instruction. Their academic achievement is remarkably below the level of expectation.

2. ACTIVITY LEVEL:

(a) Hyper active: They are constantly engaged in movement, restless in tapping finger or foot, in jumping out of seat or in skipping from task to task.

(b) Hypoactive: It is opposite of hyperactivity. Fails to react or seems to do everything in slow motion.

3. ATTENTION PROBLEMS:

(a) Short attention span: Easily distractible by irrelevant stimuli. Unable to concentrate on a task for long period of time.

(b) Perserveration: Attention becomes fixed on a single task which is repeated over and over. In motor area repetition of a particular response again and again.

4. MOTOR PROBLEMS:

(a) Coordination: Generally clumsy and awkward poor fine and gross-motor coordination, poor body balance, walking is rigid and stiff.

(b) Tactile-Kinesthetic: Poor tactile discrimination, excessive need to touch, poor writing and drawing performance.

5. VISUAL-PERCEPTUAL PROBLEMS:

(a) Visual discrimination : Unable to distinguish between visual stimuli.

(b) Visual figure-ground : Unable to perceive a foreground figure against a background.

(c) Visual closure: Cannot fill in missing parts when only part of a word or object is seen.

(d) Visual Memory: Experiences difficulty remembering and revisualizing images or sequences.

6. AUDITORY-PERCEPTUAL PROBLEMS:

(a) Auditory discrimination: Unable to distinguish between sounds.

(b) Auditory Comprehension: Fails to get meaning from the spoken word and/or environmental sounds.

(c) Auditory figure-ground: Unable to attend to important auditory stimuli by pushing all other auditory stimuli into background.

(d) Auditory Closure: Cannot fill in the missing sounds when only a part of the word is heard.

(e) Auditory Memory: Experiences difficulty remembering and reproducing auditory stimuli or sequences.

7. LANGUAGE PROBLEMS:

(a) Speech Development: elayed or slow development of speech articulation.

(b) Formulation & Syntax : Unable to organize words to form phrases, clauses or sentences which follow from the standard language grammar.

8. WORK HABITS:

He may organize work poorly, work slowly, frequently confuse directions, or rush through work carelessly.

9. SOCIAL-EMOTIONAL BEHAVIOUR PROBLEMS:

(a) Impulsive: Does work on his whims, fails to think about consequences of behaviour.

(b) Explosive: Gets angry when obstructed, shows temper tantrum behaviour when picked on.

(c) Social Competence: Below average for his age and ability, poor adjustment.

(d) Mood: Varies from hour to hour.

10. ORIENTATION PROBLEMS:

(a) Spatial organization: Poorly developed concept of space, disterted body image, trouble in judging distance and size, difficulty in discriminating figure from ground, parts from the whole and left from right.

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(b) Temporal Concepts: Improper concept of time, difficulty in understanding concepts like before and after, now and then, today and tomorrow.

11. ACADEMIC DISABILITIES:

The child has problems in reading, writing, spelling and arithmetic. Each learning disabled child does not manifest all the different kinds of disabilities. He may manifest unique combination of such traits. Problems in one area may lead to problems in other areas. For Exaple: inattention — distractibility— failure to discriminate — poor decoding — lack of generalization — academic failure — emotional problems — poor decoding.

Identifying Learning Disabled Children:

It has been mentioned above that LD children show developmental disabilities in cognitive, language and other related areas. The classroom teacher will have to use certain criteria to find out whether or not a child is learning disabled. Teachers are the first persons to screen learning disabled children from the classroom. The children would then be referred to clinics, diagnostic centres or specialists for rigorous examination. For example six types of behaviour which may suggest learning disability on the part of a preschool child are as follows: (1) poor coordination, (2) lack of basic concept mastery, (3) perceptual distortions, (4) incomplete language development, (5) short attention span, and (6) hyperactivity.

The teacher is an important part of the diagnostic-prescriptive process. The diagnostic-prescriptive process begins when a child is suspected of having a learning or behaviour problem. This process continues until it is determined that the problem no longer exists. According to Kirk and Kirk (1971) the following five steps are involved in identifying a learning disabled child and then following him up for remediation.

1. Determining that a problem exists.
2. Making behavioural analysis to determine the symptoms and describing the nature of disability.
3. Determining the physical, environmental and psycholoqical correlates of disability.

........4.

4. Formulating a disgnostic hypothesis.
5. Organizing a systematic remedial program based on the symptoms, deficits and diagnostic hypothesis determined during the previous stages.

STEP :Determining that a problem exists:

When the teacher finds that one or more children in his classroom experience difficulty in school lessons, he should consult his/their school record card. If the school record car is not available, he should check the school examination mark a determine the strength and weakness of the child in different school subject areas. He should get the child assessed for his intellectual ability by an expert psychologist and then find out if there is a big discrepancy between child's present level of achievement an expected level of achievement. The teacher may determine whether or not there is a developmental imbalance in the levels of child's reading, spelling, writing and arithmetic. In other words the teacher should determine what are the child's areas of strengths & weaknesses. This information may be gathered through case history, clinical observation, informal testing and formal testing.

The teacher is in a position to observe student's performance in various types of learning situations. He may administer some informal tests as a part of the normal instructional programme. The informal evaluation may include (1) seatwork exercises, (2) orally administered exercises, (3) informal teaching of lessons which assess various skills, and (4) individually administered written assignments.

The formal testing of the child involves a team effort because specialised or standardised tests are to be administered. It may also involve the possibility of a medical examination. Depending upon the child'ssuspected area of deficits, certain formal tests in that area may be chosen for admission. In this case, the teacher should consult the specialists in the area concerned. The teachers who are trained in administering standardized tests and interpreting the scores may administer the formal tests on their own for making the diagnosis.

The teacher may use some Rating Scale for the diagnosis of learning disabilities in children. One frequently used

Rating Scale is Pupil Behaviour Rating Scale developed by Charles High. This Scale assesses the child's behaviour in FIVE important dimensions; in each dimension there are some important skill on which the child is assessed on a FIVE point scale. In each area the child gets a score of 1, 2, 3, 4, or 5 depending on whether or not he exhibits very poor (1) poor (2) average (3) superior (4) and very superior (5) skills in that area, Since there are 24 areas of assessment, the childcan get a maximum score of 120. The LD Children Usually get a score of less than 70. The important areas which Pupil Behaviour Rating Scale contains xxxxxxx are as follows:

I. Auditory Comprehension and Listening:

i) Ability to follow directions.
ii) Comprehension of class discussion.
iii) Ability to retain orally given information
iv) Comprehension of word meanings.

II. Spoken language:

i) Ability to speak in complete sentences using accurate sentence structure.
ii) Vocabulary ability.
iii) Ability to recall words.
iv) Ability to formulate ideas from isolated facts.
v) Ability to tell stories and relate experiences.

III. Orientation:

i) Promptness.
ii) Spatial Orientation.
iii) Judgement of relationships(big,little,far,close etc.)
iv) Learning directions.

IV. Behaviour:

i) Cooperation.
ii) Attention.
iii) Ability to organize.
iv) Ability to cope with new situations (parties,trips etc).
v) Social acceptance.
vi) Acceptance of responsibility.
vii) Completion of assignments.
viii) Tactfulness.

V. Motor:

i) General coordination (running, climbing, hopping etc.)
ii) Balance.
iii) Ability to manipulate utensils and equipments.

Using the Pupil Behaviour Rating Scale the teacher can get a lot of information about the child which will help him and the specialists determine whether or not a child is a learning disabled child.

STEP 2 : Describing the Disability:

The second step concentrates upon the analysis and description of how the student handles the learning tasks in areas where his performance is below the level of his ability. For example, if the students' level of performance is low in reading the analysis should be directed for answering such questions as:

i) What faculty habits did the student display in reading?
ii) How did he attack new words ?
iii) What kind of words did he confuse ?
iv) What kinds of errors did he make ?
v) How fast does he try to read ?

In essence this stage involves analysing how the child learns and he processes information.

STEP 3: Determining the Physical, Environmental and Psychological Correlates of the Disability:

Factors within the child and his environment are frequently related to learning disability. For example, a sound blending disability may be related to ability to learn words, Kirk (1972) divided the correlates of learning disability into (1) Physical factors (2) Environmental factors, and(3) Psychological factors.

Physical Correlates:

1. Visual defects.
2. Auditory defects.
3. Confused spatial orientation.
4. Mixed laterality.
5. Hyperkinesis.
6. Poor body image.
7. Undernourishment.

Environmental Correlates:

1. Traumatic experiences.
2. Conditioned avoidance reactions.
3. Undue family pressures.
4. Bilingualism.
5. Sensory deprivation.
6. Lack of schooling.

Psychological Correlates:

1. Poor visual or auditory perception and discrimination.
2. Slow understanding and interpretation of concepts.
3. Poor organizing and generalizing ability.
4. Minimal motor and verbal skills.
5. Inability to express concepts vocally or manually.
6. Defective short-term memory.
7. Poor closure and sound blending.

STEP 4: Formulating a Diagnostic Hypothesis:

All the previous information is collected and an explanation is framed regarding child's inability to learn. Technical terms are avoided as far as possible and child's disabilities are stated in simple terms for general understanding. In this stage the teacher and the diagnostician become relatively clearer of the deficiencies of the child and the possible underlying psychological processes. The formulation of the hypothesis, of course, is shaped by the theoretical outlook of the diagnostician.

STEP 5: Organizing a Systematic Remedial Programme:

This area concerns developing a teaching plan to remediate the deficiencies of the child. Most researchers feel that teaching should be done through child's areas of strength while helping him to develop his areas of weakness. The teaching strategies should take into account student's developmental level, age, interest, attitude, Planning strategies require a broad range of knowledge of the methods, materials, approaches, curriculum areas, child development etc. The child may be assessed from time to time to examine whether or not the teaching programme becoming effective.

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Dr. U. N. Dash,
Reader,
Deptt. of Psychology.

REMEDIAL TEACHING STRATEGIES

It has been discussed earlier that LD children exhibit disorders in areas related to perception, motor, memory, reading, writing, spelling and arithmetic. The strategies of teaching in each of these areas are discussed next.

Remediating Perceptual and Motor Problems:

Piaget (1952) emphasizes the importance of early sensory-motor learning as fundamental to the development of more complex perceptual and cognitive skills later on. Child's physical interaction with the environment during the early years helps him to develop spatial and time orientation which are essential for his mental development.

The human being has six sensitivity systems: the visual (sight), auditory (sound), tactual (touch), kinesthetic (muscle feeling), olfactory (small), and gustatory (taste). Perceptual motor skills are the resultant of the interaction of various channels of perception with motor activity. Getman's (1965) visuomotor model assumes that many of the difficulties the child faces in reading, writing, spelling etc., can be traced back to child's inadequate development of the general motor system. Kephart's (1971) perceptual-motor theory assumes that perceptual motor development helps the child to establish a solid and reliable concept of the world by orienting him properly to the basic xxxrealities of his immediate surrounding. Good spatial and temporal orientation help the child to develop abstract symbolic skills. The teacher may select some representative activities for teaching sensory-motor and perceptual-motor functions. Activities in the motor area are similar to the activities of a physical education programme. These activities are divided into three areas :

1. Gross motor activities.
2. Body-image and body-awareness activities.
3. Fine motor activities.

Gross Motor Activities:

These activities involve the total musculature of the

Body, and the ability to move various parts of the body on command, controlling body movements in relation to various outer and inner elements such asgravity, laterality and body midlines. Through these the child gains effective body movements, and develops a sense of spatial orientation and body consciousness. These consist of walking activities, floor activities, balance beam activities and other grossh motor activities

The child may be trained to do the following walking activities.

1. Forward walk: Have the child walk through a straight or curved path on the floor to reach a target.
2. Backward walk: Walk through the same course backwards.
3. Sideways walk: Walk on a straight or curved line sideways to the right one step at a time and to the left one step at a time.
4. Animal walks: Imitate the walks of various animals
5. Moon Walk: Imitate leaping kangaroo like steps of astronaute on moon.
6. Ladder walk: Place ladder flat on the ground, have the child walk between rungs forward, backward, happing.
7. Variations: All the different variations of the walking exercises can be performed.

The Child may do the following Floor Activities:

1. Angels in the snow: Have the child lie down with his back on the floor and move different body parts on command.
2. Crawling: The child should be trained to creep, and crawl unilaterally and cross laterally.
3. Obstacle crawl: Create an obstacle course with boxes, tables etc. and have the child crawl through a particular course.

Have the child do the following Balance Beam Activities:

1. Walking forward: The child walks forward slowly on the balance beam. The task can be made more difficult by decreasing the width of the beam.

2. Walking backward: Walk backward while keeping balance.
3. Sideways walking: Walk across the ~~back~~ board sideways.
4. Variations: Variations and more complex activities for the balance beam can be devised.

Other Gross Motor Activities: include the following:

1. Skateboard : The child may learn skating.
2. Standup: Have the child sit on the floor with the knees bent, get up and sit down again.
3. Jumping, hopping & skipping exercises: Variations to those exercises can be done.
4. Rope Skills: A rope can be used to teach the child various motor skills.

Body-Image and Body-Awareness Activities:

Through these activities the child develops accurate images of the location of the parts of the body and the function of these body parts.

1. Point to body parts: Ask the child to point to various parts of the body. Children can lie down on the floor and point to different parts of the body.
2. Puzzles: Puzzles of peoples, animals, objects etc. can be cut to show functional portions of the body.
3. Life-sized drawing: The child can lie down on a piece of paper and lines can be drawn around him. He fills in the colours of the clothes and details of the body and the face.
4. Knowing body parts through touch: Ask the child to close eyes, touch different parts of the body and ask him to name which part is touched.
5. Pantomime: The child performs the roles of people in different occupation.
6. Following instructions: Give verbal instructions to the child concerning movements of his body.
7. Estimating: Have the child estimate the number of steps it will take him to reach the goal.

8. Facial expression: Have the child look at the pictures of people and infer about their moods from their facial expressions.
9. Water activities: Have the child perform gross motor movements in a pool. Swimming is very good for strengthening general motor functions.

Fine Moter Activities:

Fine motor activities are very essential for drawing, painting, writing etc. Fine motor activities include (1) throwing and catching activities, (2) eye-hand coordination activities. The child can do the following throwing and catching activities:

1. Throwing : Let the child threw objects of different sizes to targets located at different distances.
2. Catching: Let the child catch objects thrown by the teacher.
3. Ball games: Let the child play different ball games.
4. Tire-tube games: Old tire tubes can be used for rolling and catching.

The following are some eye-hand coordination activities:

1. Tracing : Trace lines, pictures, designs, letters.
2. Water Control: Carrying and pouring water to specified levels.
3. Cutting & Pasting: Cut papers with scissors and paste it on different designs.
4. Figure copying: Let the child draw different geometric shapes.

Some of the Chalkboard Activities are as follows:

1. Dot-to-Dot: The child connects dots with a chalk.
2. Circles: Draw large circles in one hand clockwise and anticlockwise.
3. Letters and numbers: The child can practice making letters and numbers on the chalkboard.

The following Eye Movement Activities may be practiced

1. Ocular-pursuit training: The child is to follow moving target with eyes. Movement may be done in a horizontal and vertical arc.

2. Moving ball: Have the child follow the motions of a ball with eyes.
3. Quick focus: Have the child look at a pencil in front of him and then look at a target on the wall. Repeat a dozen times and change targets.
4. Trace pathways: Have students trace pathways on paper using crayon and then finger. These pathways can become increasingly complex.

Perception means recognition of sensory information. Many of the problems in reading and writing that a LD child experiences in schools is partly due to problems associated with visual, auditory and cross-modal perception. Part-whole perception is very important for learning, reading, and writing. The child must be able to move flexibly from whole to parts as per the demands of the situation. Perception of shape size etc. is also very important for reading. The child can be trained in four major areas of perception:

1. Visual perception
2. Auditory perception
3. Haptic perception
4. Cross-modal perception

Visual Perception:

The child can practice the following activities for improving visual perception:

1. Pegboard designs: Let the child reproduce coloured geometric patterns to form the design on a pegboard using coloured pegs.
2. Block designs: Using wood or plastic cubes that have different colours in different faces, let the child match geometric shapes and build copies of the models.
3. Finding shapes in pictures: Let the child find round objects or designs in a picture.
4. Bead designs: Let the child reproduce different bead designs.
5. Puzzles: Have the child put together puzzles.
6. Classification: Let the child classify geometric shapes of varying sizes and colours.
7. Matching geometric shapes: Let the child match different kinds of geometric shapes.
8. Playing cards: Playing cards can be effectively used to teach the children classification, colour, counting, etc.

9. Letters and numbers: Games that provide opportunities for matching letters and numbers should be used.
10. Finding missing parts: Use pictures from magazines, cut off functional parts and let the child identify which part is missing.
11. Rate of perception: Use letter and number strings and present them for a brief period and let the child recognize.

Auditory Perception Activities:

Auditory comprehension is important for understanding instructions in the classroom and also for reading achievement. Following is a collection of teaching strategies designed to help children improve auditory perception.

Auditory sensitivity to sounds:

The children can be trained to listen to various sounds. Let the children close their eyes and listen to sounds of cars, aeroplanes, animals, singing of birds, etc. These sounds can also be placed on a tape recorder and the children may be asked to identify sounds. The teacher can make various sounds in the classroom and the children can identify sounds with eyes closed. The child can be trained to identify different kinds of food and shaking sounds.

Auditory attending:

Let the children close their eyes. The teacher can clap hands, play a drum, bounce a ball in a rhythmical pattern. Ask the children to repeat this rhythm.

Discrimination of Sounds:

With eyes closed, the children will be asked to judge the distance of a sound, its location and direction. The child would move in the direction of a sound, follow the sound. The child will be trained to discriminate between loud and soft, near and far, high and low sounds. One child in the class may ask a question and other children will identify who he is.

Awareness of Phonemes and Letter Sounds:

Let the child say which word begins like milk, sounds like milk, etc. Ask the child to find pictures in magazines that

begin with letter T. Let the child learn nursery rhymes and poems. These activities would improve his listening skill.

Tactile and Kinesthetic Perception Activities:

For children finding difficulties in learning through visual or auditory modalities. Tactile and kinesthetic perception provides an avenue for learning. The following are some representative activities.

1. Feeling textures: Have the child feel various texture, such as smooth wood, metal, sand paper, sponge, wet surfaces, foods, etc.
2. Touch Board: These are made by attaching different materials to small pieces of wood. The child touches the board and learns to discriminate various shapes.
3. Feeling shapes: The child learns to discriminate various shapes by touch.
4. Feeling temperatures, weights etc: The child feels hot, cold and warm and similarly learns to discriminate heavy and light.
5. Smelling : Discriminates between objects by smelling.
6. Stereognosis: Trace designs, numbers and letters on child's palm and ask him to identify and reproduces the shape he has felt. The child can identify letters by feel.
7. Grab bag: Put various objects in a bag or box. Have the child recognize through sense of touch.
8. Arranging sizes by feel : Arrange geometric shapes of varying sizes by feel.

Cross-Model Perception Activities:

For some children difficulty in learning arises because they are not able to transfer information from one modality to another. Most academic tasks require intersensory and cross-model perception. Below are given some activities.

1. Visual to auditory: Look at a pattern of dots or dashes and repeat it in a rhythmical pattern on a drum.
2. Auditory to visual: Child listens to a rhythmical beat and makes a visual pattern of dots.

3. Auditory-vorbal to visual: Describe a picture to the child. Let him choose the picture from among several alternatives.

4. Visual to auditory-verbal : Let the child look at pictures. Ask him to say which picture begins with 'F'.

5. Tactile to Visuo-Motor: Let the child feel shapes in a box or under a covering and draw the shapes on a piece of paper.

Remediating Attention and Retention Problems:

Learning disabled children face difficulty in attending to relevant aspects of situation, and once the information is processed, in retaining the information in memory. There are at least three stages of memory: reception, storage, and retrieval. First the child receives information. Poor reception is related to inability to attend. Secondly the information must be stored or retained. Thirdly, the child must be able to retieve the information that is stored. A learning disabled child may have difficulties either in reception, or storage or retrieval or in all of those.

Because memory plays an important role in every aspect of learning, a disability in this function seriously interfere with learning. It is possible to give children training to improve their memory through techniques of selective observation, organization of materials and repetition. The following is a list of representative activities that would improve the attention and retention of the learnt material.

General Memory Activities:

1. Importance of review: Use repetition to make sure that children learn the material well. Recitation, test questions and review sessions will help student remember the material.

2. Organization of the Material: If the materials are presented in an organized form, retention of the material will be better. The more the children can relate what they are learning to what they already know the better they will remember the material.

3. Mnemonic Strategies: The different strategies of remembering are rehearsal, chunking, grouping etc. The children can be trained with strategies of remembering information. For example one child remembered the word 'look' because it had two eyes in the middle.

Auditory Memory Activities:

1. Do this: Put 5/6 objects in front of the child and give a series of directions to follow.
   Example: Put the yellow flower on green block.

2. Following directions: Give the child several simple tasks to perform "Draw a big red square on your paper, put a small green circle underneath and draw a blackline in the middle of the circle.

3. Learning Poems: Let the child learn nursery rhymes, poems, finger plays etc. Ask him to hold a list of numbers and digits in memory.

4. Number Location: Give child a series of numbers or single words. Ask him, for example, to write the fourth are in the series 3, 9, 7, 4, 2, and 5.

5. Television and Radio Programmes: Ask the child watch T.V. programme, listen to radio programmes and then tell the story afterwards.

6. Going to the Moon: One child says a sentence, I went to Moon'. The next child repeats this and adds a new one. The next repeats these two and add a new one. Let the story telling continue.

7. Repetition of Sentences: Dictate sentences and let the students write them.

8. Serial order of letters or numbers: Tell the letters or numbers serially omitting one. Let the child say the number or letter omitted.

9. Story telling: Tell the child a story and let him tell the story back.

Visual Memory Activities:

1. Finding Missing Object: Expose a collection of objects, cover and remove one object. Show the collection again and let the child tell which is missing.

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2. Memory for Designs: Show the child a geometrical design then take it away. Let the child copy in design from memory.

3. Design Series: Expose a series of design or objects. Let the child place the designs in the same order from memory. Playing cards, coloured blocks, or blocks with designs may beused for the purpose.

4. Tachistoscopic exposure: Expose number or letter cards for short period through tachistoscopes. Let the child tell what he saw.

5. Picture stories: Place pictures in a series that tell a story. Let the child see the pictures. Remove the pictures and let the child tell the story.

6. Observation: Let the child look out of window, then come to the room and tell all the things he saw. Let the child observe a pattern of beads or buttons and reproduce the pattern.

Planning Remediation for Reading Problems:

The normal sequence for the development of language skills is (1) listening, (2) speaking, (3) reading, and (4) writing. Poor reading skill is the greatest handicap of majority of learning disabled children. The initial stage of learning to read may be divided into 2 phases: (1) word recognition skills, and (2) reading comprehension. The teacher of a child having reading problems must have an understanding of the normal reading growth. The normal sequence of reading is: (1) Development of reading readiness, (2) the initial stage of reading, (3) rapid development of reading skills, (4) the stage of wide reading, and (5) refinement of reading skills. For the young children we should concentrate on the first three stages of reading.

Children having reading problems may have difficulties in visual area or auditory area or both. These children reverse letters and symbols, reverse words, invert letters ('u' for 'n' 'd' for 'q'), have difficulties in carrying a visual image of the word or letters, have trouble in remembering the order of the visual stimuli, have trouble in discriminating between vis

stimuli, frequently lose their place while reading, have trouble in breaking words into parts and combining the parts into a whole. In the auditory field they face difficulty in discriminating between similar sounds and words, pronouncing an unfamiliar word, break words into syllables and letters, blend sounds into words and remember the order of the auditory stimuli.

Reading Methods and Materials:

1. Early letters emphasis: Decoding refers to the ability to master the relationship between the sound and the letter symbol. In reading a letter or word, the childshould be able to associate the sound with the printed material. To help the child do this some commercial programmes emphasize on early letter learning as a prereading skill. Knowledge of letters is related to reading achievement.

2. Words in Colour: In order to make initial reading easier, significant phonemic aspects of the words are written in colours. In Indian languages there are letters formed by combining two or three basic letters. Such letters in a word may be written in a particular colour.

3. DISTAR Reading Systems: The materials and methods in DISTAR Programme make use of behavioural approach to teaching and specify the teacher's wordings and actions. In the DISTAR programme, a problem in reading is broken down into component parts, and then each component skill is taught in a sequence. The steps to be followed in this programme include: (1) Symbol-action games -they are used to teach skills such as left-right orientation, and linear sequence. (2) Blending - This is used to teach children to spell words by sounds. This is done by saying the word slowly and then blending the sounds together. (3) Rhyming - this is used to teach children to recognize the relationship between sounds and words.

4. Language experience approach to reading: The development of reading skill is interrelated with the development of the listening, speaking and writing. The raw materials for reading are the experiences and language of the child. In this approach, the child is asked to dictate a story to the teacher. These are written by the teacher and they become the basis for the child first reading experiences. The language-experience approach permits the child to conceptualise the following about the

What I can think about, I can talk about

What I can say, I can write (or someone can write for me)

What I can write, I can read

I can read what others write for me to read.

5. Multisensory approaches to reading: Receiving the same information in different sensory modalities would facilitate learning. In this approach, the child (a) sees the word, (b) hears the teacher say the word, (c) says the word himself, (d) hears himself say the word, (e) feels the muscle movement as he traces the word, (f) feels the tactile surface under his finger-tips, (g) sees his hand move as he traces, and (h) hears himself say the word as he traces.

6. Noting facts and important details: Let the child read a passage and then ask comprehension questions using who what, where, when etc. This will improve his reading comprehension. Similarly let the child read a small story and get the main idea. He can find a good title for the story.

7. Following a sequence: Teacher can give events in a scrambled order and ask the child to sort them into correct order.

8. Drawing inferences and reaching conclusions: The reader will have to go beyond the facts presented in the text. Teacher asks questions like 'What does the author mean ? Can you predict or anticipate what will happen next ?

9. Close Procedure: This may be helpful for comprehending passages. The paragraph or a story is re-written with blanks in between. The child after reading the original paragraph fills up the blanks.

10. Questioning strategies: The types of questions stimulate the thinking of children. Questions can be asked as given below

Literal questions: What did he want to eat ?
Interpretation : Why was the boy happy ?
Critical Reading: How would you have solved this problem?

The above are some methods and materials that can be employed to improve reading. While implementing the above the teacher must keep the above in mind:-

1. Providing reading material suited to the child's developmental and reading level.

2. Miking provisions so that the child understands the difficult words.

3. Providing adequate motivation for reading.

4. Providing for difficulties in comprehension of longer units.

5. Increasing the speed of silent reading.

6. Overcoming faulty habits in oral reading.

7. Providing graded exercises in the study skills.

8. Encouraging adequate independent reading.

9. Providing for superior readers.

Strategies for Remediating Writing Problems:

Writing is an expressive communication and has three areas: (1) handwriting (2) spelling and (3) written expression. Chalfant and Scheffelin listed six steps as the developmental hierarchy of writing:

1. Scribbling: The child must know how to hold pencils and manipulate his fingers to perform random movements involved in this step.

2. Tracing : The child is given connected letters and shapes to trace. This is then followed by practice in tracing disconnected letters.

3. Copying : The child is shown a model and is asked to copy it.

4. Completion of tasks: Part of the figure or letter is missing and the child is asked to complete it. Mastery of figure completion can be followed by word and sentence completion.

5. Writing from dictation: In this stage the child writes letters as they are spoken, writes words and sentences, supplies missing words, and sentences.

6. Propositional Writing: The child can write on his own from memory and by framing new sentences.

Activities for teaching handwriting to the child are as follows:

1. Chalkboard Activities: Let the child draw circles, lines, geometric shapes and numbers on the blackboard using gross motor actions.

Finger painting, writing on sand should also be encouraged.

2. Position and Paper: Teach the child how to sit, how to hold paper, how to hold pen or pencil. This part which is usually ignored by teachers is very essential.

3. Tracing: Let the child trace letters, numbers, designs etc. The forms may be given in disconnected way and the child is asked to complete it.

4. Drawing between line: Let the child practice drawing between double lines. Let there be a number of dots and let the child make a figure by connecting dots.

5. Auditory reinforcement: Some children are helped in the motor act of writing by hearing the directions, for example 'down-up-and-around'. Care must be taken to see that the child is not distracted by the verbal instructions.

6. Words and sentences: After writing letters, the child should be taught to write words and sentences. Spacing, size, slant are the factors to be considered.

Activities for Teaching Spelling:

1. Auditory perception and memory for letter sounds: Provide practice in auditory perception (discussed earlier, perception of letter sounds, knowledge of phonics and structural analysis.

2. Visual perception and memory for letters: Visual perception and memory should be strengthened in order to retain the visual image of letters. Flash cards can be used as means for developing speed.

3. Multisensory approach to spelling: Have the child look at the word, pronounce it correctly and use it in a sentence. Ask the child to see the word, say the word, spell the word orally and trace the word in the air. Let the child look at the word, close his eyes and see the word in mind's eyes. Let the child write the word from memory. Then the child writes the word without any hesitation.

4. Listening Centres and Tapes Spelling lessons can easily be put on tape. Spelling lessons can be completed in the laboratory.

5. Programmed Spelling: Teach a small word and then go on adding small letters one after another to make new words. Provide verbal reinforcement for correct responses.

6. Placing alphabet chart: Place a chart in the classroom on the wall or the child's desk which contains all the letters in the language. When the child has any suspicion, the child can readily refer to the chart.

7. Word families: Families of words can be used to teach the child. For example, man, can, fan, tan etc.

8. Dictionary work: The child should be encouraged to refer to the dictionary in cases of doubt. This would prevent the child from writing the word in a wrong way in the first place.

Activities for teaching written expression:

Writing is a very difficult enterprise. There must be rich input experiences for the children so that they can manifest it through writing. Dawson has suggested a developmental sequence in teaching writing.

1. Composing and dictating to the teacher: Before children begin to write by themselves, they can develop skills in organising ideas through language by dictating composition. The teacher writes the story down and the child gets the idea that thoughts can be expressed in oral language and written down.

2. Copying: The next step is to copy the ideas the teacher has put in the written form. Now the child needs the visual-motor skills and the hand-writing skills. Copying may be very tiring for some children and it needs close supervision to be of value.

3. Dictation: After the story is copied by the child the teacher helps the child recall the story and then the teacher dictates the parts of or the entire story for the child to write. At first the child will need to study the story carefully but later the child will be able to write as the teacher dictates without previous study.

4. Rewriting: Have the child rewrite the story independently without the dictation by the teacher.

5. Practice: Much practice is needed in learning to write. Give the child many experiences in writing. Difficult spelling words can be anticipated and given on the board, or the child may simply ask for the spelling of difficult words.

Planning Remediation for Cognitive skills and Arithmetic:

Learning disabled children frequently face problems in arithmetic and mathematics. Disturbance in quantitative thinking is a major consequence of learning disability. Arithmetic is an academic area that requires nonverbal thinking, but language also plays an important role in solving arithmetic. In assessing child's level of arithmetic skill, the following skills may be considered.

1. Sets and matching.
2. ~~Rexxxxxxx~~ Relational concepts.
3. Counting, measuring and matching.
4. Seriation (arranging objects in order)
5. Relationship of parts to whole.
6. Operations (addition, subtraction, multiplication, and division).
7. The decimal system.

Children having arithmetic disabilities have disturbances in spatial relationships, visual perception abnormalities, perserveration, difficulty with symbols and cognitive disturbances. These children often confuse spatial relationships such as: up-down, over-under, top-bottom, high-low, near-far, front-back, beginning-end, and across. They have difficulties in pointing to objects and counting, in seeing objects in groups, in perceiving shapes as an entire entity, in having as an understanding of time and space and direction.

The following are some representative activities for ~~xx~~ teaching arithmetic:

1. Basic computational skills: Each child's problems should be evaluated with reference to underlying deficits in learning processes: verbal, spatial, perceptual and memory. The child's problem in basic computational skills like addition, subtraction, multiplication and division must be assessed. Problem in each area should

be broken down into component parts with the component skills put in a sequence. The child can be trained to master one skill after another.

2. Addition, subtraction, Multiplication, and division: Many textbooks at the primary level deal with these problems very well, provide concrete experiences to the child, explain the same problem in several ways and use pictorial descriptions as an aid to learning. May (1974) suggests the use of number line for teaching additions and other operations.

3. Fractions: Geometric shapes can be used to introduce fractions. Start with halves, followed by quarters and then eights. Wallace and Kauffman (1973) suggest the following chart for teaching fractions.

Full							
½				½			
¼		¼		¼		¼	
1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8

4. Learning the computational facts: Once the concepts behind facts are known, the child must memorise the facts themselves. To do this, it is necessary to write them, say them, play games with facts, take speed tests, etc. Flash cards, rolling dice, playing cards can be used to teach computational facts.

5. Work Space: A large table with equipment that can help in performing number tasks is helpful. Counting materials, an abacus, beams, sticks, play money, rulers, measuring instruments are among the items the child might use.

6. Matching and Sorting: From a collection of objects, let the child match pairs of objects according to shape and size.

7. Puzzles, pegboards and form boards: Let the child solve different puzzles, form designs and shapes on peg boards and fit various shapes on form boards. The child

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can be taught relationships between concepts of size and length.

8. One-to-one correspondence and counting: The child should have concept of one-to-one relationship. Have the child place a number of cups on the table and for each cup let him place one plate. Counting should be taught by helping the child make motor, visual and tactile response. Let him count and place pegs in a hole, string beads, etc. The child can be asked to clap three times, jump four times, etc.

9. Sets: Card games, playing cards, concrete objects provide excellent materials for developing concepts of sets.

10. Seriation: Ask the child to put objects in order of size, length, etc. and find out the third, fourth, etc. in the series.

11. Measuring : Pouring sand, water and beans from one container to another helps the child develop concepts of measurement.

12. Playing Cards: The child can arrange playing cards by suits, number and colour. This would improve his classification skill and the recognition of numbers.

13. Time and Money: Use real clock and teacher-made clocks to teach the child the concept of time. The use of real money and life like situations is an effective way to teach number facts to children.

14. Tap out combinations: Tap out the combinations on the table and have the child tap out the combinations. This enforces number learning with kinesthetic and auditory modality.

15. Other areas related to arithmetic: Specific lessons and plans are needed to develop concepts of time and directions, map reading, reading of graphs and charts and concepts of money.

The remediation programmes for helping the child overcome perceptual, reading, writing, spelling and arithmetic problems have been discussed above. Many of the remediation programmes described above are in the form of games which are

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meant to attract the attention of child. Using these games and tasks, the teacher can vary the demands of the task to suit to the developmental level of the child. The tasks should neither be too easy or too difficult, or else the child will lose interest in the task. The implementation of the various programmes should be made keeping in mind the specific needs of the child.

The child is an active seeker of knowledge, Hence the child should be given enough opportunity to actively experiment with his environment and discover the knowledge for himself by insight. The teaching method should be inherently absorbing. The teaching of the skills must have direct relevance to the real-world experiences of the child as young children are moved by more by concrete experiences. The tasks should be designed so that the child does not have too much of failure experiences, because this would lower down his self-confidence and the child would soon give up the task. Proceed to teaching difficult level skills after easier level skills are fully mastered. Keep a record of the individual pr[illegible] which includes the components which the student has mastered and to which he should givex further attention. Educational toys and aids are important tools for teaching various concepts. The teacher can use commercially available toys or may design toys using his creativity. The effects of the training programme should be evaluated from time to time with a view to monitoring the progress of the child.

BEHAVIOUR MANAGEMENT

Dr. U. N. Dash
Reader,
Deptt. of Psychology.

It is not true that all learning disabled children would exhibit behaviour problems of some sort. But improper development in the intellectual domain may place some constraints on the childs general level of adjustment with his external world. Poor coping and adjustment may sometimes be witnessed in the form of behavioural abnormalities. It has been discussed earlier that some learning disabled children may either be hyperactive or hypoactive. In both the cases it would be considered as a behavioural problem. The LD child has short attention span, he is easily distracted by irrelevant stimuli in his environment. He is not able to concentrate on a single task for the required period of time. Sometimes his attention becomes fixed on a single task so that the child repeats the same actions over and over again. The attentional problems may sometimes be translated into behavioural problems. Some children may have difficulties in social perception.

Let us consider the problems of learning disability from the view point of

(1) Personality and emotional development.
(2) Development of social perception and social skills and manners.
(3) Development of a attentional processes.

Personality and emotional development:

The LD child is a victim of a continuous cycle of a failure to learn and emotional reactions to failure. Emotional well being is an essential pre-requisite for learning to take place. Feeling of failure leads to adverse emotional responses, feelings of self-rejection, poor ego perception, and anxiety. Remediation must find a way to reverse this cycle - to build feelings of self worth, to increase confidence and self-respect and to experience success.

The following activities should be emphasised:

1. Psychiatric and psychological services: For the most severely affected child, it may be necessary to provide psychiatric and psychological services. Appropriate referrals to the clinics should be made.

the function of each part of the body. Make a card board man with movable limbs, put the man into different positions and let the child duplicate these positions.

3. Make a puzzle from the picture of a person and have the child assemble the pieces. Cut the puzzle so that each major part is easily identifiable. Have the child complete a partially drawn figure and tell what is missing in an incomplete picture.

4. Help the child put together a scrapbook by himself and about himself. Include pictures of him at different stages of growth, a picture of the family and his pet, a list of likes and dislikes, accounts of the trips, awards he has won and so on.

Sensitivity to other people:

The LD children often fail to understand the meaning implied in facial expressions and gestures.

1. Draw or collect pictures of faces and have the child asscertain if the face conv[illegible] the emotion of happiness or sadness. The emotions to be shown include anger, surprise, pain, lov[illegible] etc.

2. Discuss the meanings of various gestures such as saying 'good bye', shaking a finger for 'no', 'shrigging a shoulder', turning away, etc.

3. Find pictures, short-filmed sequences or story situations where the social implications of gesture, space and time are presented.

4. Let the child infer about the mood of the speaker from his voices.

Social Situations:

1. Read or tell the child an incomplete story that involves social judgement. Let the child complete the story. A short film of the social situation may be presented and the characters may be discussed with the child. The consequence of each action in the filmstrip may be discussed.

2. A series of pictures can be arranged to tell a story involving a social situation. Have the childarrange the pictures and tell the story.

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3. Exercises may be given to help the child read maps, charts, practice in following directions, reaching specific places and estim. ing distances.

4. Help the child to differentiate between real and make belie-ve situations.

Social Maturity:

The child should be given training for social maturity.

1. Role playing, creative play, stories and discussions can help the child see what happens if rules of the game or rules of the manners are broken.

2. Establish independence on the part of the child. Encourage him to go to places alone. Plan activities so that the child makes simple purchases alone. Plan activities so that the child interacts with others, ask them questions, interv-iews them.

3. Let the child learn to e ethical judgements.

4. Let the child make plans for a trip, activity, party, picnic, meeting, etc. Then help the ch ild successfully implement the plan to gain a feeling of independence and maturity.

Behaviour modification techniques can be used with LD children both for managing behaviour and teaching academic skills. To control any undesirable behaviour and to teach the children appropriate forms of behaviour, the principles of classical and instrumental conditioning can be employed. For any undesirable behaviour the child exhibits, there are behaviour modification techniques for training him to avoid the undesirable behaviour andteaching the desirable behaviour.

Behaviour modification techniques require the investigator to (1) carefully andsystematically observe and tabulate the occurrence of specific events that proceeds the behaviour of interest and (2) manipulate those events to effect a desired change in subject's behaviour. The antecedent stimulus that leads to the behaviour and the consequence of behaviours are identified. The consequence of the behaviour may be reinforcing for the child and hence this behaviour is maintained. The investigator does something to change the stimulus that leads to the behaviour and makes sure that the behaviour is not reinforced.

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The behaviour modification approach requires the teacher to determine the behavioural goal to be accomplished by the child. This goal must be specified in a broad way, and the effect of learning should be observable rather than being inferred. The teacher controls the student's behaviour by manipulating the environmental conditions. For example, a hyperactive child may be encouraged to modify his behaviour if there is a positive reinforcement for sitting quietly for a period of five minutes. The following is a brief summary of the steps that a teacher should follow:

1. Identify the antecedent conditions that lead to the behaviour.
2. Identify the consequence of behaviour. Is thechild reinforced for engaging in a particular kind of behaviour ?
3. Make attempts to change the stimulus conditions that lead to a particular kind of behaviour.
4. Remove the source of reinforcement that follow an undesirable behaviour. This wo[illegible] extinguish the undesirable response.
5. State clearly what the teacher expects the child to do and break this goal into a sequence of ordered steps or tasks.
6. Create conditions so that the child demonstrates the desirable behaviour even for a brief period of time and then reinforce this behaviour.
7. When the desirable behaviour is consistently reinforced, the frequency and the duration of its occurrence will increase.

The problems of child's attention can be dealt with by following the techniques discussed earlier. Behaviour modification techniques will be very much effective in dealing with the attention problems of the children.

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AIDS AND EQUIPMENTS OF THE RESOURCE ROOM

Dr. S. K. Goel,
Reader in Special Education,
Regional College of Education,
Bhubaneswar - 751 007.

Our country has witnessed phenomenal expansion of educational opportunities in the post independent period. However, disabled children have not yet benefitted substantially.

The National Policy of Education 1986 is envisaging education of disabled children as far as possible in common schools. This policy has urged the need for stupendous developments in personnel, material, planning and management, etc.

Placement of handicapped children in the common schools demands many supportive services, one of the major items being the instructional material.

It is true that most of the handicapped children can assimilate more than 80 percent of the regular classroom instruction when appropriate reading material is provided.

Moreover, learning will become more interesting and enterprising when appropriate instructional strategies are adopted by the classroom teacher.

A simple provision of facilities does not necessarily ensure effective implementation. Many regular teachers at all levels are perplexed about how to meet the responsibility of the growing numbers of disabled children entering regular classrooms.

The facilities for the training of special teachers are now available in the Regional Colleges of Education, Regional Training Centres being run by the

National Institutes for the Handicapped, Special Education Departments in the Universities and selected colleges of Education. The training facilities are being further expanded. The successful implementation of the IED depends upon the responsiveness of the administrators and general teachers in the School. Short-term Orientation Courses for administrators, heads of the institutions and general teachers associated with IED Scheme maybe organized. There should be a well equipped resource centre at the State Level. It will be utilized in conducting training courses for the resource teachers and for other programmes conducted at the State Level.

Following composite area planning approach (CAPA), IED models need to be developed. Planning of a package of services in a specified sector is termed as composite Area Planning Approach. The size of the Area is determined by the criterion of economic viability and geographical feasibility. Another dimension of the composite area planning refers to the comprehensive nature of the package of services like prevention of disability, identification and assessment of the disabled, educational provision and rehabilitation.

The composite area should be as small as possible for effective utilization of resources. It implies clustering of Schools in a specified area for special provision and sharing of the facilities. A higher secondary School may be considered to be the nucleus of the proposed network. More specialized facilities will be located in the Special Education Centre (SEC) in the nucleus School from where they can radiate to the composite area institutions. This centre is to be equipped as a resource centre with full time staff. Around each

of such schools there are 2-3 middle and 6-8 Primary schools which are known as feeder schools.

Over 90% of the school going population has a primary school within a distance of 1.5 kilometres. Cluster children with one set of needs in one primary School and with another set of needs in another because primary Schbols are available in walking distance in all directions. Some of the moderate needs of the disabled children can be met by ordinary teacher through adaptation of teaching and managerial skills with training.

A resource teacher is needed for children with sensory deficits. Specialist consultants to the regular teacher (resource teacher) are beginning to appear in School systems in several countries. By providing supplementary assistance, more disabled children can be served by the regular classroom teacher. The goals of integrated education are essentially similar for both able and disabled students. But to achieve these educational goals, we need to provide resource teaching in integrated setting. The resource teacher directs and monitors the disabled children according to their requirements. The integration requires resource room facility. A resource room may be set up preferably in an existing room in the school. A new room may be built only where no accommodation is available to the satisfaction of the State Government. Grant shall be available for construction of resource room in School in such circumstances. Resource room will have essential equipment, learning aids and material.

It may be necessary to remove architectural barriers or to modify existing architectural facilities so as to provide easier access to disabled children to

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the School premises. Grant shall be available for this purpose for the schools where at least 10 handicapped children are enrolled.

Some core facilities can be provided in each of the institutions individually (i.e. in the Resource Room) and some on shared basis (i.e. in the Resource Centre). For example, blind child needs resouce facilities for learning braille, mobility and for sensitization of auditory and tactual sensations. The hearing impaired children need hearing aids to overcome the hearing loss. Resource teaching helps Orthopaedically handicapped children for developing better coordination of muscles for learning academic skills.

The mentally retarded children are helped to develop daily living skills and are given remedial teaching to cope with the normal children.

Some of the following aids may be useful in resource room:

1. Pegs

   Aims: To teach general awareness (number skill through play-way method).

2. Dominoes

   Aim: To teach colour concept.

3. Sensorial Apparatus

   Aim: To teach size concept.

4. Matching Cards.

   Aim: To teach how to match various types of figure

5. Recreational Toys

   Aim: To teach motor ability

6. Geometrical shapes

   Aim: To teach shape concept

7. Mathematical Signs
   Aim: To teach number skills.

8. Model Clock
   Aim: To teach time concept

9. Alphabets/Digits.
   Aim: To teach the child pre-reading.

Thus resource teaching helps these children to grow better. Resource Teaching is a pre-requisite of Integrated Education. There are three basic requirements of resource teaching.

i) Congenial environment-positive attitudes of parents, siblings, teachers and peers.

ii) adequately prepared instructional material for the child as well as for regular teachers in the resource room; and

iii) the cooperative child who is attentive and interested in teaching learning activities.

The Resource teacher not only helps these children to learn special skills but also helps regular teachers, administrators and parents in understanding the abilities and disabilities of these children. The Resource Teacher acts as a bridge between teachers and child; administrators & teachers; and parents and child.

Thus the resource teacher is the catalyst for making the programme a great success. The integrated programme can only be successful when the resource teacher is committed to his services and he gets all cooperation from team of professionals required for identification, placement and monitoring.

The resource teacher must have well equipped resource room. The costly items may be installed in the resource centre and shared by different users within the specified area but the less expensive ones may be used in every institution for the resource room.

The world over, tremendous progress has been made in developing aids, appliances and apparatus used in training, employment, recreation and convenience of the disabled. Electronics have made great strides and electronic devices are available in plenty. If adapted to suit the disabled, they could greatly help in their daily activities. It is essential to mobilise the interest of this industry so as to produce aids and appliances useful for all categories of the disabled. Various Guides/Catalogues/Technical Aids Information Systems/Databases have been developed for the disabled in India and abroad. Some of the important tools are given below.

Dinesh Mohan and K.P.Kothiyal of IIT, New Delhi complied a "Guide to Aids and Appliances for the Visually Disabled" in Journey, 1984. In Section I of this guide some relevant information about aids, appliances and equipment for the blind and the partially sighted has been included. In all there are 162 product entries. Major items of information are title, a brief description of the product, manufacturer's/Supplier's address and the price.

In this Section, the entries are made under the following heads:

Braille Duplication and Braille Writers.
Writing Aids
Braille Paper
Talking Books and Taper Recorders
Mobility
Low Vision Aids
Other Optical Aids
Educational Aids/Mathematical
Educational Aids/Geography
Teaching Aids
Intelligence Tests

Vocational Aids
Measurement
Clocks and Watehes
Games and Puzzles
Sports
Kitchen Equipment
Personal Devices

At the end of this section, a list of 40 manufacturers/ suppliers with their addresses has been provided in alphabetic order for easy reference. Information on aids available outside India was compiled from literature available in the English Language and is presented in Section II. The National Rehabilitation Engineering Institute (NRE I) has recently prepared a catalogue of Aids, Appliances for the Blind and Orthopaedically Disabled. The NREI was set up by the BMA as a premier centre for manufacture and supply of almost all imaginable and newly developed aids, appliances, rehabilitation tools for the blind and the orthopaedically handicapped. Recently, NAB LBMRC has produced an "Indian Guide to Aids and Appliances for the Blind" and there are 151 product entries inthe Guide. A list of manufacturers and an uptodate price list have also been provided. British Aids Database is a useful information tool for comercially available aids for the disabled. EEC Technical Aids Information System for disabled persons has been developed by the European Economic community.

ABLEDATA - an online computerized databank of equipment and devices for disabled people has been initiated by National Rehabilitation Information Centre in collaboration with Californian Department of Rehabilitation. About 10,000 aids and devices for handicapped people are likely to be internationally available via computer terminals in the near future.

Rehabilitation Information Resource Directory and online Rehabilitation Database have been prepared at National Rehabilitation Information Centre, Washington. These information sources provide all materials relevant to the education and rehabilitation of all categories of disabled persons.

A Directory of "Special Devices for Hard of Hearing, Deaf and Deaf-Blind Persons" has been compiled by Hurvitz & Carmen of Veterans Administration Medical Centre, California. Some of the leading organizations like National Centre on Educational Media and Materials for the Handicapped, ohio; Educational Resource Information Centre (ERIC), Washington; Council for Exceptional Children (CEC), Virginia have developed very sophisticated aid and appliances for handicapped. In India also, some of the organizations like NIOH,NIVH,NISHH, NIMH, ALIMCO,AIIMS,NAB,NASEOH, etc. have taken a lead in developing aids & appliances for the handicapped persons.

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ASSIGNMENTS

SE 1. What is the definition of special education ?

SE 2. Why are incidence figures higher than prevalence figures ?

SE 3. List four concepts developed by early contributors to special education that are relevant today.

a)

b)

c)

d)

SE 4. Give four reasons why labels should be deemphasized.

a)

b)

c)

d)

SE 5. Name the items included in an IEP.

a)

b)

c)

d)

e)

f)

g)

SE 6. Describe the instructional setting alternatives of the continuum of services model.

Setting 1.

Setting 2.

Setting 3.

Setting 4.

Setting 5.

Setting 6.

Setting 7.

Contd..

Setting 8.

Setting 9.

Setting 10.

SE 7. Write True or False.

a) The term "exceptional children" refers Primarily to the gifted and talented ______

b) There has been a steady, even growth in special education services since the early 1900s______

c) Institutions were originally set up for custodial purposes. ______

d) Mildly handicapped children should always be educated in regular classes. ______

e) There are relatively more handicapped children in minority cultures than there are in the general population. ______

f) In most states teachers have a legal responsibility to report suspected cases of child abuse and neglect. ______

g) Although there may be architectural barriers in a given School, all programmes must be accessible to the handicapped. ______

h) A person may be handicapped in one situation and not in another. ______

i) Today the trend is to reduce diagnostic labeling, particularly of children with mild disabilities. ______

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j) Labels should be used only when necessary because they may have adverse effects if used incorrectly. ______

k) Mainstreaming does not mean always placing exceptional children in regular classes. ______

l) Mainstreaming is the educational placement of the child in the least restrictive environment. ______

m) The move to small group homes from large residential facilities (known as de-institutionalization) is not necessary. ______

M.R.8. Write True or False:

a) A diagnosis of mental retardation should never be made solely on the basis of an intelligence test. ______

b) A special education teacher could not teach if he did not have the IQ scores of the mentally retarded children in the class. ______

c) Adaptive behaviour measurement is more subjective than measurement of intelligence. ______

d) Doll's major contribution to a definition of mental retardation is related to the area of social competence. ______

e) Retarded children should be classified only when classification leads to the development of an appropriate educational programme. ______

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f) One can place great faith in the use of incidence figures for planning services for the mentally retarded for any given community. ____________

g. A knowledge of the causes of retardation can be very helpful to a teacher in the actual instruction of retarded children. ____________

h) The causes of most cases of mental retardation cannot be clearly identified. ____________

i) Most TMR children will be educated in self-contained special classes. ____________

j) Special day schools for the retarded continue to be a popular educational option. ____________

k) Mental retardation is not primarily a medical problem. ____________

l) The education of mentally retarded should not have overtones of vocational training with ultimate rehabilitation as its goal. ____________

m) In India, concentration must be in rural areas and community based services on a large scale are very much required. ____________

n) The presence of CNS pathology is the rule rather than the exception with TMR group. ____________

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MR 9. Fill in the blanks.

a) The popularly used tests of intelligence generally report a summary of performance in the form of an ________ score.

b) The AAMD requires that a child' ________________________ and ________________________ be considered in diagnosing mental retardation.

c) The components of adaptive behaviour are ________________________________

d) A significantly subaverage score is one that is ____________ standard deviations below the mean on a standardized test of intelligence.

e) The developmental period is the period between the child's ________________ and ________________________

f) The three categories in the classification system which are most useful for special education programming are ______________, ________________________________.

g) The major criticism of foster family care for the retarded is ____________________.

h) The mentally retarded child has special problems with letters which have ________ and ________________________.

i) The look-say method is a disaster for mentally retarded child. He needs phonics and tactile perception through ________________.

Contd...

j) The ________________________ between professional people is a big deterrant to develop meaningful programmes for the retarded.

k) It is necessary to ________________ the programme if it has not done any good to the child.

l) Slow learners must be provided with relatively ____________ of work of a simple type.

m) The slow learners form a ________________ of the school population.

n) The group between one and two standard deviation below the mean is described as having ______________________________.

MR 10.) Complete the following sentences with one of the options provided.

a) The focus of mainstreaming is to help __________ the life of the retarded child (Protect/Normalize/organise).

b) Most professionals believe that ____________ programmes provide the mentally retarded and handicapped with the best educational opportunities. (Special Education/Mainstreaming/Segregated).

c) ________________ is one alternative which is going to be very helpful in serving a large number of mentally retarded in India (IED/Special School/Residential schools/Sheltered Homes).

d) National Policy of Education-1986 (MHRD,Govt. of India) envisages education of handicapped children in ________________ as far as possible. (Common Schools/Special Schools).

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e) ______________________________ are the first and Primary Educators of the mentally retarded child. (Social workers/Parents/ Teachers/Community Health workers/Doctors).

f) To be classified as mentally retarded, a person's IQ, as measured by a standardized intelligence test, must be lower than ______ (55/70/100).

g) Organic causes of mental retardation generally lead to ______________________________ retardation. (mild or moderate/severe or prfound).

h) Mental retardation that occurs because of a lack of Oxygen in the bloodstream is caused by ______ ____________________ (Systemic disease/infections disease/Physical agents).

i) Special education programmes have been challenged on the basis of depriving children of ______________________________ ____________________ (personalized attention/Proper diagnosis/ their constitutional rights).

j) Davison and Neale have suggested that ______________________________ of retarded children would probably achieve higher levels of intellectual and social functioning if they were provided with appropriate training at home (20%/40%/a majority).

MR 11. Which of the following is not used to classify an individual as mentally retarded.

a) An IQ score for below the mean.
b) An inability to meet social demands.
c) Problems that manifest themselves before the age of sixteen.
d) At least one behaviour problem.

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MR 12. Which of the following best describes a case of mild retardation ? The person can

a) achieve an intellectual level comparable to a 16-year-old.

b) Work in skill areas with some supervision.

c) Care for himself in basic hygiene areas but cannot do much more on his own.

d) None of the above.

MR 13. There are more mentally retarded people in the lower socio-economic classes because.

a) Children of these classes are mentally not reinforced for intellectual abilities.

b) Retardation is detected and reported by, welfare and poverty programmes.

c) Lower class people have inferior genes

d) None of the above.

MR 14. Which of the following is a false statement ?

In the next decade we can expect

a) more specific labels for the mentally retarded

b) more support from the legal system for the retarded.

c) less segregation of retarded and average children in the classroom.

d) educators to develop more positive and productive programmes for the retarded.

MR 15. The idea of providing extra help and specially trained educators to assist retarded children in making significant gains

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a) is mandated by the Education for all Handcapped Children's Act.

b) is referred to as special education

c) has received a considerable amount of criticism

d) all of the above.

MR 16. Fill in the blanks

a) The components of AAMD. Definition of mental retardation are

i) ____________________

ii) ____________________

iii) ____________________

b) Approximately ____________________ % of population in India is considered mentally retarded.

c) There are variations in the prevalence of mental retardation in India. The reasons for them could be lack of uniformity in

i) ______________________________

II) ______________________________

iii) ______________________________

MR 17. Match the following

1.	IQ level	medical
2.	Level of functioning	psychological
3.	Cause of MR	adaptive benaviour
4.	Deficient in MR	educational
5.	Severe	50-70
6.	Mild	35-49
7.	Moderate	below 20
8.	Profound	20-34

MR 18. Study the following statements and write True or False.

a) A five year old child with mild mental retardation cannot be distinguished from a normal child of five years in many areas of development.

b) A 16 year old person with moderate mental retardation can go beyond 5th grade level in academic subjects.

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c) A 22 year old person with severe mental retardation can be trained in all the vocational skills and can support himself and his family.

d) A 13 year old child with profound mental retardation will respond for training in self help skills.

d) A 27 year old person with mild mental retardation can pass pre-university examination.

MR 19. Which one of the following is not a prenatal cause of mental retardation.

a) Exposure to X-ray

b) Birth anoxia

c) Rubella

d) Chromosomal abnormality

MR 20. Which one of the following is the most common cause of mental retardation in India ?

a) Diabetes in the mother

b) Difficulties during delivery of the child

c) Jaundice inthe mother

d) German measles in the mother

MR 21. Mental retardation can be caused by

a) Ill treatment of mother during pregnancy.

b) Interacting with mentally retarded persons.

c) Pregnancy after 35 years.

d) Black magic.

MR 22. List four preventive measures against mental retardation during the post natal period.

a) ____________________

b) ____________________

c) ____________________

d) ____________________

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MR 23. In a mentally retarded person with fits

a) Fits cannot be controlled

b) Behaviour problems are always present

c) Frequent fits impair learning process

d) None of the above.

MR 24. Hyperkinesis includes all of the following except

a) Excessively active

b) Distractibility and short attention span.

c) Vacant stare

d) Lack of inhibition and poorly coordinated activity.

MR 25. List a four conditions which can be mistaken for mental retardation.

a) ______________________

b) ______________________

c) ______________________

d) ______________________

MR 26. One of the commonest forms of multiple handicap is

a) Down's Syndrome

b) Cerebral Palsy with mental retardation

c) Learning disabilities

d) Mental retardation with microcephaly

MR 27. Match the following:

1) Neck control	a) 8 months
2) Sitting without support	b) 24 months
3) Standing without support	c) 4 months
4) Indicates toilet needs.	d) 10 months

MR 28. Give any three indicators of mental retardation

a) ______________________

b) ______________________

c) ______________________

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MR 29. Match the following:

1) Social smile	a) 6 months
2) Drinking from a glass by self.	b) 4 months
3) Rolling Over	c) 15 months
4) Walking without support.	d) 21 months

MR 30. Arrange the following steps in sequence.

1) Intervention
2) Diagnosis
3) Screening for mental retardation
4) Assessing current level of functioning
5) Psychological testing

MR 31. A male child aged 9 months is brought to you with the complaints of inability to hold the head, not able to roll about and not able to fix the eyes on parents. The child cries when hungry. The mother feeds the child periodically. On examination the child is found to be in lying position, not responding to any stimuli. The doctor after examining reported that clinically all the systems are normal.

MR 32. A ten year old boy is brought to you with the complaints of poor scholastic performance and adament behaviour. He is studying in 5th standard. The parents report that the boy scores poor marks in class examinations since one year. He picks up quarrels with other children in the school. He shows interest in games and is found to be playing all the time. According to doctor's report the boy is normal physically. How will you proceed further in this case ?

MR 33. A seven year old girl is brought to you with the complaints of inability to talk properly, difficulty in walking, fits once a month and inability to brush teeth, bathe and dress properly. On a detailed enquiry it is found that the child was born after a prolonged labour and all the milestones of development of the girl were delayed. The doctor has prescribed medicines for fits and the physiotherapist is giving passive stretching exercises for the limbs as the limbs were found to be stiff. How will you proceed further in this case ?

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MR 34. What are the three types of tests used for assessing general intelligence ?

a) ______________________

b) ______________________

c) ______________________

MR 35. Developmental schedules are most useful for the age group:-

a) 3-22 years
b) 5-15 years
c) 0-3 years
d) all of the above.

MR 36. The most commonly used test for assessing adaptive behaviour in mentally retarded persons is

______________________________________.

MR 37. A gross assessment of the ________________

and ________________________deficits are necessary before assessment as they affect the psychological test performance.

MR 38. Write true or false.

a) The intellectual functions and adaptive behaviour of a mentally retarded person can be assessed by using a single test.

True/False

b) Presence of sensory and motor impairments, language delay and behaviour problems pose difficulty in the psychological assessment of mentally retarded persons.

True/False

c) While testing a mentally retarded person, one should choose a complex test first and then go for simpler tests.

True/False

Contd...15/-

d) Keeping colourful toys, toffees and biscuits come in handy in establishing repport with a mentally retarded child during a test situation. True/False

e) Seguin form board test is a verbal test. True/False

f) Vineland Social Maturity Scale is the most commonly used Adaptive Behaviour Scale for mentally Retarded individuals in India. True/False

g) Observations about family interaction patterns should not be included in a psychological report. True/False

h) The IQ score is a gross estimate of the general intellectual functioning and it does not give a view of the abilities on individual test items. True/False

MR 39. Breaking down the teaching steps into small, systematic ones is called ________________

MR 40. Write True or False

a) The activities/skills must be taught only once a day. True/False

b) Training of the mentally retarded person must be carried out only at the DRC. True/False

c) Child should be appreciated even if he attempts to do a particular task. True/False

d) Assessment of mentally retarded persons should be done only once in 3 years. True/False

e) Two or three skills or activities can be simultaneously taught to a mentally retarded child. True/False

f) Children with profound mental retardation can be integrated in normal schools. True/False

MR 41. The three aspects of the integrated education of the disabled are

a) ____________________

b) ____________________

c) ____________________

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MR 42. A male child aged 2 years needs training in sitting without support. He does not have any other handicap. What activities will you take up to train him ?

MR 43. A child of 4 years needs training in standing without support. He does not have any other handicap. What activities will you take up to train him ?

MR 44. A child of 10 years needs to be trained in indicating his toilet needs. How will you train him ?

MR 45. Behaviour modification may be used to

________________ ________________

undersirable behaviours and ____________

adaptive behaviours.

MR 46. Behaviour modification may be used to ______ undesirable behaviours and ____________ ________________adaptive behafiours.

MR 47. The target behaviour should be defined in ________________ and ____________ terms.

MR 48. Name the five steps in implementing a behaviour modification programme.

a) ____________ (b) ____________

c) ____________ (d) ____________

e) ____________

MR 49. Write true or false.

a) Antecedents are the events which occur immediately before the behaviour has occured. True/False

b) Differential Reinforcement should never be used with punishment procedures. True/False

c) Extinction should be used when problem behaviours are self-injuries or harmful to others. True/False

Contd...17/-

d) Aversion is the last method to be used for decreasing undesirable behaviours. True/False

e) Intermittent reinforcement is generally used first when teaching a new skill. True/False

MR 50. Name any four techniques for decreasing undesirable behaviours.

a) ____________ (c) ____________

b) ____________ (d) ____________

MR 51. The four principles of presenting reinforcement are:

a) ____________ (c) ____________

b) ____________ (d) ____________

MR 52. Match the following:

1.	Social reinforcer	(a)	Pleasant event following behaviour.	( )
2.	Primary reinforcer	(b)	Money	( )
3.	Secondary reinforcer	(c)	Praise	( )
4.	Positive reinforcer	(d)	Chocolates	( )

MR 53. The two types of chaining procedures are

____________ chaining and

____________ chaining.

MR 54. What are the four schedules of intermittent reinforcement ?

a) ____________ (c) ____________

b) ____________ (d) ____________

MR 55. Name four commonly used procedures for increasing adaptive behaviours.

a) ____________ (c) ____________

b) ____________ (d) ____________

Contd...18/-

MR 56. The characteristics of a good counsellor are

a) ____________ (c) ____________

b) ____________ (d) ____________

MR 57. List four important messages which you would give to the parents of a mentally retarded child in a rural area.

a) ____________

b) ____________

c) ____________

d) ____________

MR 58. Write True or False

a) Parents should be given high hopes that the mentally retarded child will show dramatic results. True/False

b) Lot of time must be spent in understanding the problems of the parents. True/False

c) The goal of counselling is to protect the mentally retarded child from being illtreated. True/False

d) Forming parent associations in the village will help the parents to understand the problem better. True/False

VH.59 Fill in the blanks.

a) The two parts of the visual system are the ____________ and the ____________.

b) Nearsightedness is to ____________ as farsightedness is to hyperopia.

Contd...19

c) Two diseases that resulted in large numbers of multihandicapped blind children are and ______________________.

d) ______________________ is the eye disorder caused by excessive Oxygen in incubators of premature babies.

e) Visually impaired children are classified as either ______________________ or ______________________.

f) With correction, a legally blind child has visual acuity of 20/200. A partially seeing child has visual acuity between ____________ and ______________________.

g) Field of vision is measured in terms of ______________________.

h) The name of the most common instrument for screening visual impairements in children is the ______________________.

i) The most widely accepted reason for social - emotional adjustment problems in blind children is ______________________.
This can be overcome by ______________________
____
______________________.

j) The most important areas included in the curriculum of the visaully impaired but not in the curriculum of those with normal vision are ______________________ and ______________________.

k) The media through which visually impaired children obtain information are ____________, ______________________ and ______________________.

l) The first Schools established for the visually impaired in Europe and the United States were ______________________ Schools.

m) Persons involved in assessing visually impaired children should pay particular attention to the effects of the loss of vision on ____________ development.

n) Visual acuity is the ability to clearly distinguish ________________________ or ________________________details at a specified distance.

o) Visual acuity is measured by having children read letters, numbers or other symbols from a snellen chart ________________________.

p) The basic function of the eye is to collect ________________________from the environment and transmit it to the ________.

q) A person with normal eye sight is said to have ________________________.

r) If a person's field of vision is 20 degrees or less, then he/she is considered ____________ ________________________.

s) The prolonged sensory deprivation is likely to influence ________________________ and ________________________ of the blind.

t) A person who has received the best optical correction and can see at ____________ in the best eye what a person with normal vision can see at ________________________ is considered legally blind.

H 6. Write true or false.

a) Cataracts are growths on the eye ____________

b) Visual acuity is a term for sharpness and clearness of vision.____________

c) 1.

Contd...21/-

c) Although blind children may have delayed physical development due to their inability to do some physical activities, they typically do not differ in physical ability from normal seeing children. ____________

d) Visually handicapped children are usually taught the same sequence of subjects as children with normal vision. ____________

e) Many instructional procedures that are effective for normal children are also effective for visually impaired children. ____________

f) Partially seeing children who hold their books close to their eyes when reading should be instructed not to hold the materials so close. ____________

g) The residential school traditionally follows the same curriculum as other schools in the same state or region. ____________

h) Once the child has been placed in a particular type of programme, it is safe to assume that the child will remain in that programme thoughout his/her school career. ____________

i) The school principal makes the decision about the type of programme that a visually impaired child should be placed in. ____________

j) Parents must consent to the collection of evaluation data and to the placement of their visually impaired child in a particular programme. ____________

k) Normative data provided for standardized tests are appropriate for use with visually impaired children. ____________

Contd..../

l) The community affects a blind child by not only its general attitude but also the attitude and behaviour of the neighbours, parents and peers. ______

m) Teacher can generalize about blindness on the basis of limited experience. ______

n) All blind have special talents like musical talent and fantastic memory. ______

VH.61 Define visually impaired children.

VH.62 Explain the meaning of an index of visual acuity that is stated as 20/150.

VH.63. From the perspective of educational definitions, how would you differentiate between a blind and partially seeing child ?

VH.64. List of the symotoms that may indicate eye problems.

a)

b)

c)

d)

e)

f)

g)

VH.65. List three possible causes of apparent retardation in the intellectual development, School achievement, and concept development of blind children.

a)

b)

c)

Contd...24/-

VH.66. List some optical aids that can be used by partially seeing children to assist them in reading.

VH.67. Technological advances have resulted in the development of a number of exciting new devices for the visually impaired. List some devices related to reading that blind people can use.

a)

b)

c)

d)

VH.68. List the five types of local day school programmes provided for visually impaired children.

VH.69. List five types of information that are used to make placement decisions for visually impaired children.

Contd..25/-

VH.70. What three types of instruments are used to assess VIC

VH.71. De Mott suggests that information about a number of areas be included in the educational assessment of the visually impaired. List some of these areas.

VH.72. Sighted persons feel pity for visually impaired because :

a) Visually impaired cannot live effectively in the world of sighted.

b) Sighted people fail to understand the strength of visually impaired.

c) It is taught to sighted by the society.

d) Kindness is a value.

VH.73. A visually impaired child can learn effectively if.

a) He is given a variety of experience

b) He is taught only through auditory mode.

c) He is given a chance to learn.

d) He is left to himself.

VH.74. Parents of VIC tend to over protect because :

a) they love their children

b) they hate their children

c) they are afraid for their safety

d) they fail to treat them as normal children.

Contd......26.

VH.75. Daily living skills are :

a) curricular skills

b) extra-curricular skills

c) skills for performing day-to-day activities

d) skills for maintaining good health.

VH.76. Skills required for the readiness of the child to learn day-to-day survival skills are :

a) daily living skills

b) pre-requisite skills

c) academic skills

d) curricular skills.

VH.77. For teaching all daily living activities :

a) a common methodology should be followed

b) methodology should be based on the nature of activity.

c) methodology is not necessary.

VH.78. Daily living skills should be taught according to

a) age levels

b) grade levels

c) ability level

d) none of the above.

VH.79. Aids are necessary for teaching :

a) all daily living skills.

b) certain daily living skills

c) academic and not daily living skills.

Contd....27

VH.80. Learning of daily living skills by an individual

a) continues even after the schooling

b) continues till the end of School year

c) takes place at different time intervals

d) takes place in pre-school years.

VH.81. Listening to music is

a) an academic skill b) an auditory skill

c) a daily living skill

VH.82. Money identification and money management is

a) an olfactory skill

b) a daily living skill

c) an orientation and mobility skill

VH.83. Teaching daily living skills can be regarded as

a) a separate subject

b) an integral part of the class lessons

c) out of class hours activity

VH.84. Teaching household activities is

a) mostly meant for children

b) mostly meant for men

c) mostly meant for adult blind women

VH.85. The abilities of the individual to move from one place to another are known as

a) Orientation skills

b) Plus curricular skills

c) Mobility skills

d) Walking skills

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VH.86. Teaching of mobility skills should be the same for all VIC.

a) Yes, it should be the same for all.

b) No, it depends upon the onset of blindness

c) No, it depends upon the daily living skills.

d) It depends on the capability of the teacher.

VH.87. Orientation Skills are greatly influenced by

a) the sense of taste.

b) the senses of touch and hearing

c) the sense of smell

d) the vision.

VH.88. Widely used mobility techniques in developing countries are

a) sighted guide techniques

b) guide dogs

c) long cane techniques

d) electronic aids

VH.89. Guide dog techniques cannot serve the purpose of developing countries owing to the

a) inadequacy of training methodology

b) enormous cost of the system

c) prejudices among visually impaired people

d) shortage of dogs

VH.90. At the primary school, the VIC should

a) not be taught O & M skills

b) be taught the long cane techniques

c) be taught the pre-cane mobility skills

d) be taught guide dog technique.

VH.91. In an integrated setting, the VIC can be oriented to the School environment in a better way by

a) the sighted peer group
b) the regular teacher
c) the resource teacher
d) the parents.

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VH.92. In an integrated setting

a) the resource teacher has to teach all mobility skills.

b) the resource teacher could teach O & M skills within the School Campus but not for outside travel.

c) the resource teacher should not teach mobility

d) the resource teacher should leave it to regular teachers to teach.

HH.93. Fill in the blanks.

a) The part of the brain most important to hearing is the ______________________

b) The human ear begins responding to sound at ______________________ of fetal development.

c) A person who had a hearing loss severe enough that he cannot learn language through hearing is classified as ______________________.

d) When a hearing loss is assumed to explain poor School performance, the loss would be termed ______________________.

e) When there is damage or deterioration of the cochlea or VIII nerve, the hearing loss is termed ______________________.

f). When a child displays weakness in auditory skills and yet shows no measurable hearing loss, a ______________________ should be suspected.

g) A graphic portrayal of a person's hearing is called in ______________________

h) The speech frequencies on the audiogram are ______________________; ______________________; and ______________________ HZ.

i) The audiometric test that measures a person's ability to understand speech is called ______________________

j) The average age at which children produce their first words is ______________________

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k) Severe language and speech disorders should be expected if a child's average hearing loss is greater than ______________ dB and it occurs before age ______________.

l) A child whose hearing loss is greater than ______________ dB is considered deaf.

m) The medical specialist who typically deals exclusively with children is called a ______________

The medical professional who specializes in treating ear disorders is the ______________.

n) ______________ consists of techniques that help a hearing impaired child use his residual hearing as much as possible.

o) When a hearing impaired watches a speaker's lip and facial movement, she is ______________.

p) Educators of the deaf who prohibit the use of gestures by the child are called ______________.

q) The professionals who evaluate hearing by means of audiometric testing are called ______________.

r) Educational settings for the severely hearing impaired include the ______________ ______________ and ______________.

s) The intensity or loudness of normal conversational speech at a distance of five feet is between ______________ decibels.

t) Hearing loss can affect ______________ ______________ development, and put time ______________, ______________ and ______________ adjustment.

u) Hearing aids make sounds ______________ and they do not make sounds ______________.

v) For educational purposes, children with hearing disorders are classified as either ______________ or ______________.

w) The philosophy of total communication makes use of both ______________ and ______________ procedures to teach deaf children.

HH.94.Write "True" or "False"

a) Earwax is dirt and should be cleaned from the ears. ______________

b) Children's hearing cannot be tested accurately until they are six years of age. ______________

c) The normal child established an auditory feedback loop at three months of age. ______________

d) Deaf individuals are two to five years mentally retarded as compared to individuals with normal hearing. ______________

e) The reading skills of deaf individuals may lag as much as eight to nine years behind those of their hearing peers. ______________

f) Hearing aids are electronic devices that always make sound clearer. ______________

g) Seventy to eighty percent of the sounds in our language are visible on the speaker's lips. ______________

h) Language and speech delay can result from recurrent ear infections. ______________

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i) Hearing aids are never appropriate for children with conductive hearing loss. ____________

j) The classroom teacher should use exaggerated lip movement and speak loudly to assist the hearing impaired child. ____________

k) The manual approach to communication stresses speech reading and auditory training. ____________

l) The intensity range for average conversational speech is 40-65 dB ____________

HH.95. What are the three basic components of a sound system ?

HH.96. How would you define sound ?

HH.97. List the five major types of hearing loss.

HH.98. What are four signs that might indicate a hearing loss ?

HH.99. List the different types of audiometric test.

HH.100. What are some major areas of development and adjustment for those with hearing loss ?

HH.101. What are four reasons that a child's hearing aid might squeal ?

HH.102. What are the reasons a physician might suspect a hearing loss in a newborn baby ?

HH.103. Name some signs of possible hearing loss that a classroom teacher should watch for.

HH.104. Read the following and tick the correct answer.

104.1 The resource teacher works closely with the disabled child in collaboration with

a) regular teachers b) parents
c) physicians and other specialists
d) all.

10.4.2 The prerequisities of resource room teaching are :

a) a visiting resource teacher
b) a very big resource room
c) 10-20 hearing impaired children
d) none of the above.

104.3 Do all hearing impaired students require resource facility ?

a) all
b) mild and moderate
c) moderate and severe
d) severe and profound

104.4. Periodic assessment is done by the resource teacher in order to

a) correct speech
b) develop resource facilities
c) arrange parent-teacher conferences
d) know the level of performance and adjustment of the child.

104.5 What kind of exercises are required to develop correct pronounciation in hearing impaired.

a) the use of finger spellings
b) similar sounds in the minimal pairs
c) adjustment in the regular class
d) none of the above.

104.6 The administrators and heads of regular schools should

a) not allow the hearing impaired to be admitted in their school.
b) encourage the admission of the hearing impaired child to their school.
c) consult higher authorities about such admission
d) consult parents of other children about such admissions.

104.7 To give the maximum benefit of instruction to the hearing-impaired child, the regular classroom teacher

a) should speak very slowly
b) should speak very loudly
c) should make some changes in the style of his teaching and behaviour.
d) should not put questions to him

104.8 The hearing-impaired can substantially hear and understand others if.

a) he is given nearly auditory training and practice in speech reading.
b) he is very intelligent.
c) he is given some special diet.
d) he is very healthy.

104.9 The most important role in successful integration of a hearing-impaired child in a regular school is of

a) the head of the School
b) the non-teaching staff of the School
c) the hostel staff
d) the class teacher

104.10 The hearing impaired child can do better than his hearing peers.

a) in all acativities of the School
b in co-curricular and extra-curricular acativities.
c) in any particular academic subject
d) in following class instruction

104.11 Generally, the hearing impaired child has defective
a) physique
b) language and speech
c) social attitudes
d) mental growth

104.12 The desirable or undesirable behaviour of hearing students of a class towards the hearing impaired child depends very much on

a) how the head of the School treats him.

b) how the other staff members treat him.

c) how other children of the School behave with him.

d) how the class teacher treats him.

104.13 The hearing impaired child can understand his teacher's speech better if

a) the classroom is well lighted

b) the classroom has ordinary light.

c) the classroom has special furniture for him.

d) the classroom has special material for him.

104.14 The shortcomings of hearing impaired child can be overcome by the

a) head of the school

b) class teacher

c) resource teacher in a resource room

d) parents.

104.15 The successful integration of a hearing impaired child in a regular school depends on the attitude of the

a) head of school alone

b) staff members only

c) parents of hearing children

d) all who come in contact with him.

HH 105 Give the various degrees of hearing loss.

LD106 What are Wallace and McLoughlin's four dimensions of learning disabilities ?

LD107 List the seven academic areas in which an LD child may have a severe discrepancy between ability and achievement.

LD108 What are the three primary objections to labeling a child as learning disabled ?

LD109 In order to be called a characteristic, difficulties that children with learning disabilities have must be

LD110 Give the seven educational characteristics of reading disability.

LD 111. What are the factors related to reading disabilities ?

OH 112. Write "True" or "False".

a) The term "Proximodistal" is used to refer to the process whereby the child gains control of the muscles in the trunk before gaining control of muscles in the fingers ________

b) Cerebral palsy is caused by brain damage. ________

c) There is higher incidence of speech disorders, sensory disorders and mental retardation in the cerebral palsied population than in the 'normal' population. ________

d) Cerebral palsy is rarely accompanied by convulsive disorders. ________

e) Cerebral palsied children do not attend public Schools. ________

f) Most children with osteogenesis imperfecta (congenital bone-disease) have normal intellectual ability. ________

g) Most children with cystic fibrosis (genetic disorder affecting pancreas/lungs) die during childhood. ________

h) Epilepsy is treated primarily through chemotherapy(drug administration to control the problem). ________

i) In treating a person having a grand mal Seizure (severe convulsive disorder involving loss of consciousness), it is wise to place a pencil or tongue depressor between the teeth to prevent swallowing of the tongue. ____________

j) A lavatory stall can be made accessible to all persons in wheelchairs by placing grab bars at convenient heights. ____________

k) Thick door mats should be used in front of doors to give wheelchair travelers better traction on wet days. ____________

l) Open-riser stairs are particularly well suited for persons who are wearing braces. ____________

OH 113. Fill in the blanks.

a) The suffix that means paralysis, or inability to move, is ____________

b) ____________ means before birth, ____________ means during birth, and ____________ means after birth.

c) A condition characterized by low tolerance for exercise is ____________

d) Children with asthma typically have difficulty in ____________

e) Diabetes is controlled through ____________ ____________

f) A temper tantrum may sometimes be confused with ____________ seizure.

g) A child who falls to the ground, thrashes around and loses bladdder control may be suffering from a ______________________ seizure.

h) The type of seizure that often goes unnoticed is a ________________________

i) Standards for the elimination of architectural barriers have been developed in USA by an organization called ____________________

j) Doorways should be at least ______________ inches wide to accommodate wheelchairs.

k) Ramps should be at least __________ feet wide.

l) Lavatory towel dispensers and other appliances should be mounted no more than ___ inches above the floor.

m) Obstructions on walkways should not be more than ___________________ high or they may cause travel problems.

OH 114. Name the ambulation disabilities caused by cerebral and noncerebral factors.

OH 115. Name the disabilities that affect vitality.

OH 116. Name the convulsive disorders (epileptic seizures).

OH 117. Name different types of cerebral palsy.

OH 118. Name the disorders associated with cerebral palsied population.

OH 119. Which type of supportive service is used to minimize muscular deterioration in children with diseases such as muscular dystrophy, spinal muscular atrophy, and polio.

OH 120. When is it necessary to call in professional help for a child having a grand mal seizure ?

OH 121. Differentiate between a prosthesis and a Orthosis.

OH 122. When would it be inappropriate to recommend an assistive or adaptive device for use by a person with physical disabilities ?

OH 123. Describe the conditions under which you would recommend that orthopedically handicapped children be placed in the regular classroom for their education.

OH 124. What criteria would you propose for selecting physically disabled children for placement in a self-contained special class ?

OH 125. List one question you should ask a physically disabled child's parents in each of the following areas to help develop procedures for carrying for the child.

a) Medical

b) Travel

c) Transfer

d) Communication

e) Self-care

f) Positioning

*****

ASSIGNMENTS
KEY

SE 1. Components of the definition should include:

- instruction that is part of the regular education programme.
- instruction that is individually designed to meet the needs of exceptional children.
- designed for children whose needs cannot be met by the regular school curriculum.
- may call for supportive services from speech pathologists, audiologists, physical and occupational therapists, psychologists, counsellors, and others.

SE 2. Incidence includes all persons who may have a condition during their lifetime; prevalence includes only those who have the condition at a specific point in time.

SE 3. a) Education should be individualized.

b) Tasks should be sequenced from easy to difficult,

c) Students should be active learners.

d) Learning environments should be structured.

SE 4. a) Labels lower the expectations of teachers.

b) Labels have little relevance for educational practice.

c) Children do not fit neatly into categories.

SE 5. a) Statement of child's level of performance.

b) Annual Goals.

c) Short-term cbjectives.

d) time spent in regular education environments.

e) related services

f) projected dates for initiation of services and the anticipated duration of services.

g) procedures for evaluation.

Contd....2.

SE 6.

Seeting 1. Regular class placement with few or no supportive services.

Setting 2. Regular class placement with consulting teacher assistance.

Setting 3. Regular class placement with it inerant specialist assistance.

Setting 4. Regular class placement with resource room assistance.

Setting 5. Special class placement with part-time in regular class.

Setting 6. Full-time special class.

Setting 7. Special day school.

Setting 8. Residential school.

Setting 9. Homebound instruction

Setting 10. Hospital or institution

SE 7.

a) False
b) False
c) False
d) False
e) False
f) True
g) True
h) True
i) True
j) True
k) True
l) True
m) False

M.R. 8.

a) True
b) False
c) True
d) True
e) True
f) False
g) False
h) True
i) True
j) False
k) True
l) False
m) True
n) True

MR 9. a) IQ

b) intelligence and adaptive behaviour

c) academic skill, interpersonal skill, social skill and independent function.

d) two

e) birth and the eighteenth birthday

f) EMR, TMR and S/PR.

g) lack of training of foster parents

h) rotations and reversals

i) writing

j) communication barrier

k) modify

l) small units

m) large segment

n) borderline intelligence

MR 10. a) normalize

b) mainstreaming

c) IED

d) common schools

e) parents

f) 70

g) severe or profound

h) physical agents

i) their constitutional rights

j) a majority

MR 11. d)

MR 12. b)

MR 13. a)

MR 14. a)

MR 15. d)

MR 16(A) a) Significantly subaverage general intellectual functioning.

b) Impairments in adaptive behaviour.

c) Manifestation during the developmental period.

MR 16(B) 2%

MR 16(C) a) Methodology

b) Type of population studied

c) Definition of mental retardation

MR 17 a) (3)

b) (1)

c) (4)

d) (2)

e) (6)

f) (7)

g) (8)

h) (5)

MR 18 (a) True

(b) False

(c) False

(d) True

(e) False

MR 19 b

MR 20 b

MR 21 c

MR 22 (a) Immunization of children

(b) Adequate nutrition to children

(c) Prompt control of fever in children.

(d) Immediate control of fits in children.

MR 23 c

MR 24. c

MR 25 (a) Early infantile autism

(b) Child with emotional disturbance.

(c) Specific learning disabilities.

(d) Child with hearing and/or visual handicap .

MR 26 b

MR 27 (a) (2)

(b) (4)

(c) (1)

(d) (3)

MR 28 (a) Delay in milestones

(b) Fits or physical disability,

(c) Poor scholastic performance.

MR 29 (a) (3)

(b) (1)

(c) (4)

(d) (2)

MR 30 3, 5, 4, 2, 1

MR 31 Start with infant stimulation programme. Stimulate the child with visual, auditory and tactile stimuli. Train the child in motor skills. Refer to a special educationist (or psychologist at the DRC), Physiotherapist and a speech pathologist for necessary follow up advice.

MR 32 This boy may not be mentally retarded as he was normal till 9th year. The boy should be referred to a psychiatrist for detailed examination as he might have some psychological problems resulting in the poor scholastic performance.

MR 33. The current level of functioning has to be assessed and a management plan has to be drawn out to train the child in selfhelp skills and communication skills. The child should be sent for regular follow up to the doctor and the physiotherapist.

MR. 34 a) Developmental schedules.

b) Verbal tests

c) Non-verbal and performances tests.

MR. 35 (c)

MR. 36 VSMS

MR. 37 Sensory and motor

MR. 38 (a) False (e) False

(b) True (f) True

(c) False (g) False

(d) True (h) True

MR. 39 Task Analysis.

MR. 40 a) False d) False

b) False e) True

c) True f) False

MR. 41 a) Physical Integration

b) Social Integration

c) Societal Integration

MR. 42 Ensure that the child has neck control. place the child on the back. Hold his fingers and pull him to sitting position. See that the legs are stretched and spread apart to et balance. Support the back with the palm and slowly reduce the support. Keep toys in front of the child so that the child is busy with them.

MR. 43 Look for the tone of the muscles of the child. Put him in standing position with support and see whether he can place both the feet uniformly on the ground and himself. Have the child hold your fingers with both his hands. Pull him upto standing position and keep talking to him as you do this. Slowly withdraw one hand and let him hold only one hand and stand. Gradually withdraw

the second hand also. Let him stand. See that his feet are placed apart to balance when you withdraw total help.

MR. 44 See whether the child is mobile. Check for motor problems. Observe and record the time of urination and bowel movements continuously for as period of one week. Using this record as a reference takethe child to toilet 3 to 5 minutes before the noted time. Use one code word always when you make him sit on the toilet or in the toilet area.

MR. 45 decrease and increase

MR. 46 decrease and increase

MR. 47 Observable and measurable

MR. 48 a) Identification of the problem
b) Defining target behaviours
c) Behaviour recording.
d) Functional analysis.
e) Treatment procedure.

MR. 49 a) True
b) False
c) False
d) True
e) False

MR. 50 a) Restructuring the environment
b) Extinction
c) Punishment
d) Differential Reinforcement

MR. 51 (a) Contigency
(b) Immediacy
(c) Consistency
(d) Clarity

MR. 52 (a) (4)
(b) (3)
(c) (1)
(d) (2)

MR. 53 Forward and Backward

MR. 54 (a) Fixed Ratio
(b) Variable Ratio
(c) Fixed Interval
(d) Variable Interval

MR. 55 (a) Token programme
(b) Shaping
(c) Chaining
(d) Prompting

MR. 56 (a) Sincerity
(b) Reassuring
(c) Effective communication
(d) Emotional stability

MR. 57 (a) Mentally Retarded child can be trained.
(b) Mental Retardation is not an infections disease.
(c) Mental Retardation can be prevented
(d) Step by step training of a mentally retarded child is the key to success.

MR. 58 (a) Fale (c) False
(b) True (d) True

~~MRxx59~~
VH.59 a) eye and the brain
b) myopia
c) retrolental fibroplasia (RLF) and ~~xxxxx~~ maternal rubella.
d) Retrolental fibroplasia
e) blind or partially seeing
f) 20/200 and 20/70
g) visual arc,
h) snellen chart
i) the negative attitudes of those who can see! the integration of blind children with seeing peers and inservice training for teachers.
j) orientation and mobility
k) tactile, visual and auditory
l) residential
m) concept
n) forms or discriminate specified

o) 20 feet away
p) visual information brain
q) 20/20 vision
r) legally blind
s) personality and mental make-up
t) 20 feet 200 feet

VH 60.

a)	False	h)	False
b)	True	i)	False
c)	True	j)	True
d)	True	k)	False
e)	True	l)	True
f)	False	m)	False
g)	True	n)	False

VH 61. Visually impaired children are those who differ from normally seeing children to such an extent that it is necessary to provide them with specially trained teachers, specially designed or adapted curricular materials, and specially designed educational aids, so that they can realize their full potential.

VH 62. The index of 20/150 means that an object which can be seen clearly from a distance of 150 feet by a normally seeing person must be 20 feet from the visually impaired person to be seen clearly.

VH 63. A blind child is one whose visual loss indicates that he must use braille and other tactile and auditory materials to learn. A partially seeing child has some useful vision and uses print and other visual materials in his educational programme.

VH 64. a) Child appears clumsy in a new situation and has trouble walking.

b) Child holds head in awkward position or holds material close to eyes.

c) Child constantly asks someone to tell him what is going on.

d) Child "tunes out" when information is on chalkboard or books he cannot read.

e) Child is inordinately affected by glare from sun and not able to see things at certain times of day.

f) Child has a pronounced squint, rubs eyes excessively and pushes eyeball with finger or knuckle.

g) Child has obvious physiological anomalies or signs of eye disease, such as red swollen lids, crusts on lids or crossed eyes.

VH 65. a) Restrictions in the range and variety of experiences.

b) Restrictions in the ability to move about in the environment and observe people and objects around them.

c) Restrictions in their integration into all aspects of their environment.

VH 66. eyeglass magnifiers; stand magnifiers; hand-held magnifiers; telescopic aids; television viewers.

VH 67. a) braille
b) paperless brailler
c) optacon (optical-to-tactile converter)
d) Kurzweil Reading Machine.

VH 68. a) Special class plan
b) Cooperative class plan
c) Resource room plan
d) Itinerant teacher plan
e) teacher consultant plan

VH 69. a) eye examination report
b) medical report
c) educational assessments
d) reports of behavioural observations by parents and teachers.
e) any assessment information that might be helpful in placement.

VH 70. a) those developed for visually impaired

b) those adapted for use with visually impaired

c) those developed for use with seeing population and used as is for visually impaired

VH 71. Visual efficiency — motor performance

sensory abilities — language

other impairments — intelligence

achievement

VH 72. b)

VH 73. a)

VH 74. c)

VH 75. a)

VH 76. b)

VH 77. b)

VH 78. c)

VH 79. b)

VH 80. a)

VH 81 c)

VH 82. b)

VH 83. b)

VH 84. c)

VH 85. c)

VH 86. b)

VH 87. b)

VH 88. c)

VH 89. b)

VH 90. c)

VH 91. a)

VH 92. b)

HH.93. a) Cortex

b) fifth month

c) deaf

d) functional

e) sensori-neural

f) central auditory disorder

g) audiogram

h) 500, 1000, and 2000

i) speech discrimination

j) 12 months

k) 60-80 , 2 years

l) 80

m) pediatrician, Otologist

n) Auditory training

o) lip reading

p) Oralists

q) audiologists

r) residential setting
day school, special class and
resource room

s) 40 and 60

t) speech and language
educational, vocational social and
emotional

u) louder, clearer

v) hard of hearing, deaf

w) Oral and manual

HH. 94. a) False g) False
b) False h) True
c) False i) False
d) False j) False
e) True k) False
f) False l) True

HH. 95 a) transmitter
b) medium
c) receiver

HH. 96 Sound is created by the vibration of some object. This vibration is carried across-some medium and can be heard by the ear.

HH. 97 a) conductive

b) sensori-neural

c) mixed

d) functional

e) central

HH. 98 a) illness or disease for mother during pregnancy.

b) child does not react to sounds.

c) child does not engage in normal amount of vocal play.

d) child does not pay attention in class.

e) child says "huh" in response to questions.

f) child cannot localize sound.

HH. 99 a) Pure tone audiometric screening

b) Pure tone threshold audiometry

c) Speech audiometry

d) sound field audiometry

e) Behavioural play audiometry

f) impedance audiometry

g) evoked response audiometry

HH.100 a) language/speech development

b) educational adjustment

c) vocational adjustment

d) social adjustment

e) personality and emotional adjustment

HH.101 a) earmold not seated properly in the ear

b) earmold is too loose

c) may need new earmold

d) earmold and receiver not firmly attached.

HH.102 a) history of hereditary hearing loss

b) infection or illness of the mother during pregnancy

c) defects of ears, nose, or throat

d) low birth weight

e) prematurity

f) accident, infections, or illness of the child.

HH.103 a) Frequent earaches or ear discharge

b) poor articulation, consonant sounds omitted

c) wrong answers given to easy questions

d) child often does not respond when called

e) hearing appears better when child faces speaker

f) child asks to have things repeated

g) child turns TV or radio up too loud

HH.104

HH.104.1	d)		
HH.104.2	d)	104.9	d)
HH.104.3	a)	104.10	b)
HH.104.4	d)	104.11	b)
HH.104.5	b)	104.12	d)
HH.104.6	b)	104.13	a)
HH.104.7	c)	104.14	c)
HH.104.8	a)	104.15	d)

HH.105

mild	-	20 to 40 decibels
moderate	-	40 to 60 decibels
severe	-	60 to 80 decibels
profound	-	more than 80 decibels

LD.106. a) discrepancy

b) manifestation

c) focus

d) integrities

LD.107. a) oral expression

b) basic reading skills

c) math reasoning

d) written expression

e) listening comprehension

f) math calculation

g) reading comprehension

LD.108. a) labels do not really define discrete groups of individuals; they do not account for overlap between categories.

b) little evidence exists to support the use of one educational treatment for any particular label.

c) Biased tests can cause mislabeling.

LD.109. a) observed consistently over time.

b) resistant to simple remedial teaching methods.

c) accompanied by a significant gap between achievement and ability.

LD.110. a) Attention difficulty

b) Perceptual problems

c) Poor motivation/attitude

d) Poor sound/symbol association

e) Memory problems

f) Language deficits

g) Transfer difficulties

LD.111. a) Physical

b) Environmental

c) Psychological

OH.112 a) True
b) True
c) True
d) False
e) False
f) True
g) True
h) True
i) False
j) False
k) False
l) False

OH.113 a) plegia
b) Pre-natal, Peri-natal, Post-natal
c) congenital heart defect
d) breathing
e) diet and medication (insulin)
f) psychomotor
g) grand mal
h) petit mal seizure
i) ANSI
j) 32
k) four
l) 40
m) half inch

OH.114. a) cerebral palsy
b) muscular dystrophy
c) polio
d) spina bifida
e) spinal muscular atrophy
f) spinal cord injuries
g) arthrogryphosis
h) osteogenesis imperfecta
i) Juvenile reheumatoid arthritis
j) Other musculoskeletal disorders

OH.115. a) Congenital heart defects

b) Cystic fibrosis

c) diabetes

d) asthma

OH.116. a) Petit Mal

b) Grand Mal

c) Psychomotor

OH.117. a) spastic

b) athetosis

c) ataxia

d) rigidity

e) tremor

f) mixed

OH.118. a) Communication disorders

b) Sensory disorders

c) Intellectual ability

d) Convulsive disorders

OH.119. Physical Therapy

OH.120. When seizure activity continues for more than five minutes, or when it appears that the person is going into repeated grand mal seizures.

OH.121. A prosthesis replaces a body part and an orthosis supports or assists the body.

OH.122. When a careful evaluation of the potential effect of the device has not been conducted.

OH.123. When medical, travel, transfer and lifting, self-care, and positioning needs can all be appropriately met in the regular classroom.

OH.124. The existance of specific problems that would seriously interfere with the children's education in the regular classroom or medical, transfer and lifting, self-care, or positioning needs that can only be met by placement in the self-contained special class.

OH.125. a) Medical Does the child take medication ? if so, how often and in what amounts ?

b) Travel Does the child require special arrangements to travel within the school building or the classroom ?

c) Transfer How is the child transferred on and off the school bus ?

d) Communication Can the child make his needs known to the teacher ? How ?

e) Self-Care What special equipment does the child need ?

f) Positioning What positions are best for specific academic activities ?

*****

DATA

0.1 Date

0.2 Regd. No.

0.3 Admission No.

0.4 Referred by

1.12 Socio-economic status of the family

High Middle Low

1.13 Rural / Urban / Semi-urban

1.14 Religion

1.15 Caste

1.16 Languages spoken (Encircle Mother Tongue)

SECTION -II

2.1 Informant's name and relationship with the case

2.2 Reliability of information

- Duration of contact with the case

- Accuracy of information

2.3 Present complaints, duration, nature of onset and progression (for each complaint - to be listed in verbatim - Narrative history)

2.4 Previous interventions (Nature of intervention, duration and consequence to be listed in chronological order ;

- Drugs : Taken / Not taken /Continued /Discontinued

- Professional : Medical / other help

- Faith healers / Religious help

- others

SECTION -III CHILDHOOD HISTORY

3.1 Parental

Pregnancy

Wanted/Unwanted

Age of parents at conception

Exposure to x-ray

Attempted abortion

Threatened abortion

Convulsions

Foetal movements

Normal/Excessive/Sluggish

Drug intake

Rh Incompatiability

Trauma

Swelling of feet

Maternal Illnessess

- Diabetes
- Hyper tension
- Jaundice
- Sexually transmitted diseases

Nutritional status of mother

Any other

Detail

3.2 Natal

Home/Hospital Delivery

Full term/preterm

Labour prolonged/induced

Normal/Instrumental delivery

Caesarean

Abnormal presentation

Prolapsed Cord

Normal birth cry

Delayed birth cry

Jaundice

Infections

Birth weight Normal/low/high

Maternal convulsions

Excessive bleeding

Twin

Any other

Neonatal

Colour of the Baby

Pink/Yellow/Blue/Pale

Respiratory distress

Activity of the Baby

Normal/Jittery/Lethargic

Feeding History

- breast fed

- bottle fed

- demand feeding

- scheduled feeding

Feeding problem

Bowel movement

Jaundice

Trauma

Infections

Convulsions

Congenital anamolies

Baby care

Any other

Details

2.4 Post-natal Medical History

Exanthemata

Infection

Injury

Convulsions

Jaundice

Nutritional disorders

Any other

3.5 Immunization History

	Primary	Booster
Polio		
Diptheria		
Pertusis		
Tetanus		
BCG		
Measles		
Typhoid		
Cholera		
Gamma Globulins		

3.6 Developmental Milestones

		Normal/Delayed
Smiling	(6 weeks	
Head control	(4 months)	
Rolling over	(5 to 7 months)	
Sitting	(6 to 7 months)	
Crawling	(8 to 10 months)	
Standing	(11 months)	
Walking	(12 to 14 months)	
Teething	(4 to 6 at 1 Year)	
Babling	(8 months	
First meaningful word	(1 year)	
Ten meaningful words	(1½ years)	
Small phrases	(2 years)	
Fluent speech	(3 years)	
Bowel control		
Bladder control		

3.7 Emotional and behavioural problems (if any)

SECTION -IV SCHOOL HISTORY

4.1 Attended/ Not attended / Discontinued

4.2 Nature of school

Normal / Special / Integrated / Others

4.3 Address of School

4.4 Age at joining

4.5 Class

4.6 Attendance

Regular / Irregular

Reason for irregularity

does not go/wanders/fearful/financial problem/any other

4.7 Frequency and reasons for change of school

4.8 Scholastic performance

Good / Never failed / Average / Poor / Failed

4.9 Peer group adjustment

4.10 Teacher's Report

- Scholastic performance

  Good / Fair / Poor / Not known

- Class-room behaviour

  Favourable / Unfavourable / Not known

4.11 Any other information

SECTION -V PLAY

(Information to be obtained from Guardian / Parent)

5.1 Normal

5.2 Indifferent / enjoys play

5.3 Plays most of the time

5.4 Prefers to play with animals

5.5 Prefers to play alone

5.6 Plays with older/younger/peer group/problems in group activity

5.7 Behaviour at play and in group situations

5.8 Play games governed by rules

5.9 Leisure time activities

5.10 Special preference for play activities

Details if any

SECTION -VI SEXUAL HISTORY

SECTION -VII FAMILY HISTORY

7.1 Pedegree chart

7.2 Household composition
(Information should include all members of the family, grand parents, and significant others)

NOTE: Indicate status of head of family

No.	Name	Relationship to the case and mention head of the family	Age	Sex	Education	Health	Attchm to case

7.3 Type of family

Joint / Nuclear / Extended /Broken / other.

7.4 Consanguinity

I cousin / II cousin / Others / Unrelated
(Describe the relationship in detail)

7.5 Family history of mental illness, mental retardation epilepsy and others
(Give details)

SECTION -VIII HOME ENVIRONMENT

8.1 Parental involvement

- Personal needs of the case
- Educational activities
- Play and leisure activities

8.2 Physical Environment

- Independent / Shared accommodation
- No. of rooms
- Percentage of time spent by family members with case
(Mention who spends most of time with the case)

SECTION -IX SOCIAL ENVIRONMENT

9.1 Neighbourhood Interaction

- visits to the family
- Family's visits outside

9.2 Participation in socio-religious activities

9.3 Support of extended family

SECTION -X MANAGEMENT PROBLEMS WITH REGARD TO THE CASE

SECTION -XI MISCONCEPTIONS (IF ANY)

SECTION -XII EXPECTATIONS

SECTION -XIII PHYSICAL EXAMINATION

SECTION -XIV INTERVIEW WITH CASE AND OBSERVATION

SECTION -XV PROVISIONAL DIAGNOSIS

SECTION -XVI MANAGEMENT PLAN

Signature Date

Dk

SKILL ASSESSMENT

Name :

Date :

Age :
(Assess every 4 months)

Adm. No. :

SKILLS	I Assessment	II Assessment	III Assessment
I. SELF-HELP			
- Feeding			
- Toileting			
- Brushing			
- Bathing			
- Dressing			
- Grooming			
- Wearing slippers/shoes			
II. MOTOR			
GROSS MOTOR			
- Standing			
- Walking			
- Climbing stairs			
- Jumping			
- Running			
- Throwing and catching ball			
FINE MOTOR			
- Mixing food			
- Picking up small things			

III. SENSORY SKILLS HEARING

- Reaction to loud noise
- Reaction when called by name
- Reaction to radio sounds
- Presence/history of ear discharge

VISION

- Following moving object by the eyes
- Eye contact
- Reaction to torch light

IV. LANGUAGE SKILLS, EXPRESSIVE SKILLS

- Gestural/sounds/words communicated by the child
- Intimation of words heard
- Expression of needs
- Using simple phrases
- Naming body parts
- Using 4 word sentences
- Asking simple questions
- Telling a simple story

RECEPTIVE SKILLS

- Response when called by name
- Response to simple instructions such as 'look at me'
- Response to requests such as 'No or Stop'
- Listening to a story
- Following two step directions.

V. CONCEPTION FORMATION

- Colour
- Shape
- Texture
- Size
- Sex
- Number
- Time
- Money
- Identification of familiar objects
- Use of familiar objects
- Awareness of danger hazards

VI. ACADEMIC SKILLS

- Reading
- Writing
- Arithmetic

VII. PREVOCATIONAL SKILLS

VIII. - Items of interest
- Items of dislike

IX. Any peculiar behaviour/behaviour problems observed

X. Any other

XI. Recommendations

MALADAPTIVE BEHAVIOUR CHECKLIST

Name: Date: Regd.No./Date:

Age: Sex : Informants:

Key : N= Never; O= Occasionally; F= Frequently.

Encircle the statements which best describe the child/client's behaviour being evaluated.

I. PHYSICAL HARM TOWARDS OTHERS	HOME	SPECIFY (No. of times per hour/day/week)	SCHOOL	SPECIFY (No.of times per hour/day/week)
1. Threatens Physical violence	N O F		N O F	
2. Pushes others	N O F		N O F	
3. Pinches others	N O F		N O F	
4. Pulls hair/ear/body parts of others	N O F		N O F	
5. Bites others	N O F		N O F	
6. Kicks others	N O F		N O F	
7. Hits/slaps others	N O F		N O F	
8. Attacks or pokes others with weapons	N O F		N O F	
9. Throws objects at others	N O F		N O F	
Others	N O F		N O F	
	N O F		N O F	
	N O F		N O F	

II. DAMAGES PROPERTY				
1. Tears/pulls threads from clothing	N O F		N O F	
2. Tears up books/peper/magazines	N O F		N O F	
3. Breaks objects/glass	N O F		N O F	
4. Damages possessions/toys	N O F		N O F	
5. Damages furniture	N O F		N O F	
Others	N O F		N O F	
	N O F		N O F	
	N O F		N O F	

III. MISBEHAVES WITH OTHERS

1. Pulls objects from others	N O F	N O F
2. Does not allow others to carry on their own activities	N O F	N O F
3. Makes loud noises when others are working/reading/talking etc.	N O F	N O F
4. Take others possessions without their permission openly	N O F	N O F
5. Knocks things down	N O F	N O F
6. Tell others what to do	N O F	N O F
7. Uses obusive language	N O F	N O F
Others	N O F	N O F
	N O F	N O F
	N O F	N O F

IV. TEMPER TANTRUMS

1. Crying excessively	N O F	N O F
2. Screaming/Yelling	N O F	N O F
3. Slamming doors	N O F	N O F
4. Banging objects	N O F	N O F
5. Stemping feet	N O F	N O F
6. Kicking legs while on floor/ rolling on floor	N O F	N O F
7. Spitting on others	N O F	N O F
Others	N O F	N O F
	N O F	N O F
	N O F	N O F

V. SELF - INJURIOUS BEHAVIOURS

1. Head banging	N O F	N O F
2. Biting self	N O F	N O F
3. Cutting self	N O F	N O F
4. Pulling own hair	N O F	N O F
5. Picking at wounds on own body	N O F	N O F
6. Scratching/Rubbing self	N O F	N O F
7. Beating self	N O F	N O F
8. Putting objects into eyes/nose/ears	N O F	N O F
9. Eating inedible objects	N O F	N O F
Others	N O F	N O F
	N O F	N O F
	N O F	N O F

	HOME	SPECIFY (No. of times per hour/day week)	SCHOOL	SPECIFY (No. of times per hour/day week)
VI. REPETITIVE/STEREOTYPED BEHAVIOURS				
1. Thumb sucking/putting fingers into mouth	N O F		N O F	
2. Nail biting	N O F		N O F	
3. Nose picking	N O F		N O F	
4. Teeth grinding	N O F		N O F	
5. Head nodding	N O F		N O F	
6. Body rocking	N O F		N O F	
7. Tapping feet continuously	N O F		N O F	
8. Waving hands/Body parts continuously	N O F		N O F	
9. Swinging round and round	N O F		N O F	
10. Jumping up and down	N O F		N O F	
11. Does the same activity over and over again	N O F		N O F	
12. Rotating objects	N O F		N O F	
Others	N O F		N O F	
	N O F		N O F	
	N O F		N O F	
VII. ODD BEHAVIOURS				
1. Laughs to self/laughs inappropriately	N O F		N O F	
2. Talks to self	N O F		N O F	
3. Makes peculiar/unpleasant sounds	N O F		N O F	
4. Smears dirt/Feaces on self	N O F		N O F	
5. Plays with unwanted objects excessively (Clothes, Chappals, strings, feaces, water, dirt etc.)	N O F		N O F	
6. Hoards unwanted objects	N O F		N O F	
7. Stands close to People	N O F		N O F	
8. Talks irrelevantly	N O F		N O F	
9. Kisses/Hugs/Shakes hands/Licks people unnecessarily	N C F		N O F	
10. Smells objects	N O F		N O F	

Contd....p/4

	HOME	SPECIFY (No. of times per hour/day week)	SCHOOL	SPECIFY (No. of times per hour/day week)
11. Sits with body up, body curled up.	N O F		N O F	
12. Hides face in group situations	N O F		N O F	
13. Stares blankly	N O F		N O F	
14. Sits, stands lies down for long periods of time without doing anything	N O F		N O F	
Others	N O F		N O F	

VIII. ANTISOCIAL BEHAVIOURS

	HOME	SPECIFY	SCHOOL	SPECIFY
1. Lies	N O F		N O F	
2. Steals	N O F		N O F	
3. Makes obscene gestures	N O F		N O F	
4. Undresses in front of others	N O F		N O F	
5. Exposes body parts in appropriately	N O F		N O F	
6. Makes sexual overtures to members of the opposite sex	N O F		N O F	
7. Gambles	N O F		N O F	
8. Uses vulgar language	N O F		N O F	
9. Touches others or own private parts in public	N O F		N O F	
Others	N O F		N O F	
	N O F		N O F	
	N O F		N O F	

IX. REBELLIOUS BEHAVIOURS

	HOME	SPECIFY	SCHOOL	SPECIFY
1. Refuses to obey commands	N O F		N O F	
2. Refuses to participate in regular activities	N O F		N O F	
3. Refuses to perform regular routine on time (eating, walking, dressing, sleeping etc.)	N O F		N O F	
4. Refuses to attend to personal hygiene and self-care	N O F		N O F	
5. Does opposite of what is requested	N O F		N O F	

Contd....p/5

	HOME	SPECIFY (No. of times per hour/day week)	SCHOOL	SPECIFY (No. of times per hour/day/week)
6. Takes very long intentionally to complete tasks	N O F		N O F	
7. Talks rudely/becomes argumentative.	N O F		N O F	
8. Wanders outside home/school	N O F		N O F	
9. Runs away from home/school	N O F		N O F	
Others	N O F		N O F	
	N O F		N O F	
	N O F		N O F	
X. HYPERACTIVE BEHAVIOURS				
1. Does not pay attention to the task at hand	N O F		N O F	
2. Does not continue with the task at hand for required time	N O F		N O F	
3. Does not sit at one place for required time	N O F		N O F	
Others	N O F		N O F	
	N O F		N O F	
	N O F		N O F	
XI. FEARS				
1. Fear of animals (Specify ________)	N O F		N O F	
2. Fear of objects (Specify ________)	N O F		N O F	
3. Fear of places (Specify ________)	N O F		N O F	
4. Fear of persons (Specify ________)	N O F		N O F	
Others	N O F		N O F	
	N O F		N O F	
	N O F		N O F	

XII. ANY OTHER

EXAMINER CONSULTANT PSYCHOLOGIST

PART - I

Name :	D.O.B :	Date :
Sex :	Age :	Regd No:
Education:	Occupation :	Language of testing:

I. MENTAL TESTING:

1. Developmental Age : D.Q. :
2. Mental Age : I.Q. :
3. Social Age : S.Q :

II. LEVEL OF GENERAL MENTAL ABILITY

1. Profound mental retardation
2. Severe mental retardation
3. Moderate mental retardation
4. Mild mental retardation
5. Borderline intelligence
6. Normal intelligence

III. BRIEF SUMMARY OF OBSERVATIONS AND TEST FINDINGS:

IV. RECOMMENDATIONS:

PART II - DETAILS OF PSYCHOLOGICAL ASSESSMENT

V. TESTS ADMINISTERED :

1. 2. 3. 4.

VI. BEHAVIOUR OBSERVATIONS:

1. Cooperation :
2. Comprehension of test instructions:
3. Speech and communication :
4. Attention + Concentration :
5. Other

VII. TEST RESULTS

PROFILE ANALYSIS

No	Area	Age/I.Q
1		
2		
3		
4		
5		
6		
7		
8		
9		

VIII. PROBLEMATIC BEHAVIOUR REPORTED:

IX. ANY SIGNIFICANT OBSERVATIONS ABOUT THE CASE WITH REGARD TO:

1. Family interaction/ adjustment patterns
2. School and/ or peer group adjustment
3. General Social adjustment (neighbours, work situation, strangers, relatives etc.)
4. Significant stressors for the case:
5. Others

Signature:- Examiner:

Consultant:

CHECK LIST FOR OBSERVATION OF VERBAL COMMUNICATION SKILLS

Name :   Age/Sex: Regd.No.   Date:

Instructions: write the specific responses of the child for each times.

I. MODES OF COMMUNICATION:

1. Eye contact
2. Manual gestures
3. Conversation
4. Reading
5. Mixing gestures with few words

II. RECEPTIVE LANGUAGE SKILLS:

1. Turining head towards the source of sound
2. Responding to his name
3. [illegible] on hearing 'no' or 'stop'
4. Response to simple instructions like ' look at me ' with 2-3 seconds eye contact.
5. Responce with simple requests like 'give me the ball'
6. Response to simple instructions such as 'come here'
7. Pointing to 15 common objects like chappal, pencil, shirt, light etc. upon request.
8. Response when others make non verbal gestures such as frowning, crying, suiting,etc.
9. Following 2 step directions such as give me the 'pen and switch on the light'.
10. Listening to a story for 3 minutes.
11. Identifying 3 colours in a group of colours. When named.
12. Answering simple questions, after listening to a simple story.

III. EXPRESSIVE LANGUAGE SKILLS :

1. Making vocal sounds
2. Using voice sounds to get attention.

3. Indication of 'yes' or 'no' responses to questions such as do you want a biscuit ?

4. Imitation of few words heard.

5. Using simple words to indicate his needs such as food.

6. Naming 5 body pants when asked.

7. Naming of 10 common objects when asked.

8. Using 2 word phrases such as 'give food'.

9. Using simple sentences such as 'I want the toy'.

10. Asking simple questions like what is this ? Why can't I ?

11. Using pronouns such as I, you, mine etc.

12. Carrying on a simple meaningful conversation for 5 minutes.

13. Telling a simple story in a ligical order.

14. Telling simple jokes.

IV. OTHER ASPECTS OF SPEECH :

1. Clarity of speech

2. The sounds the child seems to have problems with while speaking.

3. Movements of tongue ?

4. Movement of the lips

5. Conversation: (indifferent/No speech/nuclear/gestural/echolatic/sensible)

6. Any other.

PROFORMA FOR BEHAVIOUR MODIFICATION - CASE SUBMISSIONS

Section I

1. Name
2. Date of Birth
3. Age
4. Regn. No.
5. Sex
6. Father's Education
7. Father's Occupation
8. Mother's Education
9. Mother's Occupation
10. Socio-economic status - I/II/III/IV/V
11. Languages spoken/understood
12. Locality - 1/2/3/4
13. Key informant/informants
14. Reliability
15. Referral source for behaviour modification
16. Reasons for referral

Section - II

1. Presenting complaints and duration
2. Significant background information
   a) medical history
   b) developmental history
   c) educational history
   d) Family history
   e) Other

3. Daily Routine:
   a) Activities of daily living
   b) recreational and play activities

Contd....p/2

c) community orientation and mobility

4. Functional Analysis :

a) Antecedents

b) Consequences

c) Reinforcer identification

d) Behaviour assets

5. Therapeutic Programming and Intervention :

a) Conditions : Time/Place

b) Persons responsible and mediators

c) Materials

d) Behavioural techniques

e) Procedure

6. Evaluation :

7. Summary:

NAME & SIGNATURE:

INDIVIDUALIZED TRAINING PROGRAMME

MANUAL

The Individualized educational programmes are developed specifically to meet the educational and training needs of each child. As no two mentally retarded children have similar abilities and needs, and, as majority of the mentally retarded children require services from more than one discipline such as special education, speech pathology and audiology, psychology, physiotherapy, occupational therapy, and medicine, it is essential that a comprehensive service programme is developed for each child, based on his needs, including the appropriate input from various disciplines. Development of such an I.E.P. is an important component of diagnostic prescriptive process.

The ITP has two sections, Part A and Part B. Part A consists of general information about the child, person initiating the programme and the overall goals for the child. Part B consists of specific programming for a skill or behaviour.

GUIDELINES FOR FILLING UP PART A

1. Name :

   Give the child's full name and pet name if any in brackets.

2. Date of birth (age) :

   Given as in the records.

3. Sex :

4. Address :

   Give the present address.

5. Mother tongue/languages spoken:

   It is essential that the child is exposed to one language consistently. Therefore, record the details of the child's mother tongue as well as other language spoken by the child. Circle the mother tongue.

6. Regn. No.:

   Give the number of the registration in the institute/school.

7. Class/Roll No.:

   In case of a special school give the class group of the child and the roll number.

8. Date of writing the ITP :

   ITP is generally written on a particular day when the team meets and decides on the programme for the child. Write the date of such a meeting.

9. ITP No. :

   Each child will have number of ITPs following one after the other. Write the number of the particular ITP.

10. Significant information of the M.R. person. Includes details on
 i) the degree of retardation,
 ii) associated conditions such as visual, hearing or orthopaedic handicap, medical conditions such as epilepsy hyperkinesis and behaviour problems,
 iii) family background of the child,
 iv) strengths and weakness of the child, and
 v) medicine taken if any.

11. Goals :

Mention the overall goals set for the child after assessment, and the order of priority, if these are more than one goal.

12. Staff responsible :

The name of the staff member, whoever will be responsible for carrying out and coordinating the ITP should be mentioned here.

GUIDELINES FOR FILLING UP PART B

Part B consists of the specific programme for the child with precise instructions to carry out the programme.

13. Skill/Behaviour

Mention here, the skill on which the MR child/individual is to be trained for example, feeding skill, dressing skill, or writing skill and so on. If it is a behaviour which is to be modified, mention the name of the behaviour, for example, head banging, eye poking or body rocking, and so on.

14. Current level/baseline :

Write in behavioural terms what exactly the mentally retarded person is able to do in the given skill or behaviour for example, if the skill is combing hair, the current level can be "picks up comb, holds it appropriately". Places the comb on the head but does not comb the hair in one direction uniformly. Cannot make the partition in the hair.

15. If it is a behaviour, mention what provokes the behaviour, how exactly the M.R. person behaves and for how long.

16. Objectives :

Mention in behavioural terms what is the objective. Mention the
(a) condition,
(b) behaviour,
(c) level of performance, and
(d) dead line.
To illustrate, an example is given below:

(a) When asked
(b) the child (name of the child) indicate to the appropriate picture of the fruit named,
(c) 8 out of 10 times correctly, and
(d) on or before 15.12.1986.

17. Procedure

Give step by step procedure for meeting the objective. Do not have ambigious directions. The steps must be specific and clear. Remember to mention the reinforces to be used and when.

18. Materials needed :

Write the materials needed for developing the particular skill or improving the particular behaviour.

19. Evaluation :

Leave this column blank when the ITP is written after the specific duration when the child is evaluated for progress or problems, fill this column by noting down the observations. This is in turn forms the baseline or current level for the next ITP to be written.

To quantify the progress of the child, performance may be ranked from 1 to 7 as shown below :

Below base line	= 1
No progress	= 2
25% progress	= 3
50% progress	= 4
75% progress	= 5
100% progress	= 6
100% progress before deadline	= 7

Circle the appropriate number.
To get the percentage of progress, measure by comparing with the objective, 8 out of 10 times. How many times the child is able to do. Find out the percentage of marks.

Skills development in speech and language, motor activities for daily living and academic areas can be written in this format as also the problem behaviours to be corrected. Thus the format is of use for special educators, speech pathologists, psychologists and the physiotherapists.

20. Problem encountered:

Write here clearly, the problem faced while carrying out the programme which may be specific to the child and the situation.

...7

INDIVIDUALIZED TRAINING PROGRAMME

PART A

1. Name :

2. Date of birth (age) :

3. Sex :

4. Address :

5. Mother tongue/language(s) spoken by the MR person :

6. Registration No.:

7. Class and Roll No. :

8. Date of filling ITP :

9. ITP No. :

10. Significant information on the M.R. person :

11. Goals :

12. Staff responsible :

...8...

PART - B

Skill/ Behaviour	Current level/ Baseline	Objectives	Procedure	Materials needed	Evaluation 1 2 3 4 5 6 7

TABLE OF CONTENTS

22. Learning Disability.

23. Characteristics of LD.

24. Remedial Teaching Strategies.

25. Behaviour Management.

26. Aids and Equipments of the Resource Room.

27. Assignments.

28. Key to Assignments.

29. Proformas for Psychological Investigation.

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